THE LANCET.

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A Lecture
ON
THE DUTY OF THE GENERAL PRACTITIONER TO THE DEAF CHILD.

Delivered at the Medical Graduates' College and Polyclinic

BY MACLEOD YEARSLEY, F.R.C.S. ENG.,

SENIOR SURGEON TO THE ROYAL EAR HOSPITAL; MEDICAL INSPECTOR, LONDON COUNTY COUNCIL DEAF SCHOOLS; LECTURER TO THE COLLEGES FOR TRAINING TEACHERS OF THE DEAF, ETC.

GENTLEMEN,—The subject which I have chosen for my lecture to you this afternoon may come possibly as a surprise. The majority of you will probably think that there can be no doubt whatever as to what your duty to the deaf child can be, and this I am prepared fully to admit. But from an experience of ear and nose work which began 20 years ago I have been forced to the conclusion that, although this duty may be very clear, it is one which, like many other duties, has been, and I fear still is, terribly neglected. Were it otherwise, I venture to affirm that there would be fewer deaf adults in the world, and, what perhaps may not have occurred to you, there would be fewer deaf-mutes. The question of deaf-mutism is very largely one for the practitioner of general medicine and surgery as much as, or even more than, for the otologist. I speak here more particularly of acquired deaf-mutism, although the general practitioner also has it in his power to do good work in the prevention of the congenital variety. But of that I shall speak later. Too frequently the acquired deaf-mute comes into the hands of the specialist too late for him to render any real service. The otologist occupies an intermediate position in this matter between the general practitioner and the educationist, and is too often helpless. It is the general practitioner who might have earlier saved the patient from his trouble, and when the deaf-mute comes to the otologist the latter can only pass him on to the teacher of the deaf. The only method of treating acquired deaf-mutism is by prevention. I am, therefore, not going to talk this afternoon about mastoid and labyrinthine suppuration, nystagmus and Bárány's tests, vertigo and tinnitus, or the vast strides of otology and the improvements in modern aural operations, but to enter into the early conditions, many of them eminently preventable, that are the forerunners of those ear diseases which make these modern aural operations necessary, and which, if left to themselves, are sure and certain in their evil consequences.

PROPHYLAXIS.

Great as have been the improvements in aural operative surgery, the real progress of otology has been along the line of prophylaxis. True advancement is not so much towards the treatment of what may be termed end-results as in the probing and elucidation of causes and their prevention. The importance of preserving the hearing becomes more patent to us when we realise that (as has been shown) approximately only one person in ten has normal auditory acuity. Our normal perception of sound is such that it is beyond the requirements of daily civilised life, and there may be moderate deafness in one ear without the knowledge of the individual. Further, functional changes of the conducting apparatus take place in chronic catarrhal deafness usually without pain. These two facts may serve to account for the neglect of so important an organ at the time when its restoration would be an easy task, but they must not be considered as excuses. I need not point out the disabilities to which a person whose hearing is defective is subjected as regards his career, or how it may bar him from the public services, or how his field of usefulness as a self-supporting citizen is narrowed thereby. With a large number of such persons the commencement of disability goes back to early school life, at a time when its causes are easily remedied, and this fact alone should rouse us to a sense of our grave duties towards the deaf child. School medical inspection is beginning to do good work in this regard, and parents are commencing to realise that the ear and nose require as much supervision as do the eyes and teeth. An American physician has remarked recently with a bold outspokenness which does him credit, "That the children of our private schools and so-called better class are neglected must be largely the fault of the advice and inefficient treatment of the family physician, who is not alive to the possibilities of the early treatment of the middle ear." That sentence was applied to the United States, but I fear that its applicability is by no means confined to that country.

THE NOSE AND NASO-PHARYNX IN RELATION TO EAR DISEASE.

Were I to be asked what is the greatest advance which has marked otology during the past 10 or 15 years, I should unhesitatingly reply that it is the recognition of the fact that the greatest cause of ear disease lies in the nose and naso-pharynx. We know now that the respiratory tract commences not at the larynx and trachea as the older text-books suggested, but at the anterior nares, and that the middle ear, which is a diverticulum of that tract, shares with the nose in its functional and pathological variations from the normal. It will be useful to my purpose to consider for a moment the anatomy and physiology of the Eustachian tube. The outer or tympanic end of each tube is inclosed for about half an inch in hard bone; it is a mere slit for about an inch and a half imbedded in the soft tissues, its inner end being about three inches from the outside at the tip of the nose. Its lumen is lined with ciliated epithelium, the motion of whose cilia is towards the naso-pharynx and working to drive out infective agents; its true dilator is the tensor palati muscle, which pulls it open; its floor is pushed upwards by the swelling of the rounded belly of the levator palati, and its posterior or cartilaginous lip is pushed backward by this same contraction and pulled backward by the retractor. By these movements its mouth is open and the relaxation of these muscles, especially the levator palati, causes, with them, a pumping or sucking motion which clears the tube, and, assisted by the elasticity of the tympanic membrane, even sucks air and fluids from the tympanum itself. If, however, the region of its mouth is covered in or pressed upon by fibroid or adenoid tumours or by swollen mucous membranes these motions are lost or diminished and the important protection afforded by normal ventilation and drainage is in abeyance, so that secretions cannot get out and infections gain an entrance. That this protection is effective is to be concluded from the rarity of ear troubles when the sides of the naso-pharynx are unaffected by growths or swellings and by their frequency when the reverse is the case. The real orifice of the Eustachian tube, therefore, lies at the outer nostril, and nasal obstruction is equivalent to Eustachian obstruction, for unless the nostril is free, air cannot obtain access to replace that sucked out of the tympanum, and the normal Eustachian movements during respiration cannot take place. The mucous and serous glands of the nasal mucous membrane are functionally disturbed by faulty nasal development, by which their activity is increased, or from the result of acute infections. In the better classes of adults nasal hyperæmia is increased by under-exercise, over-heating, and intestinal toxæmia set up by over-feeding, so that, speaking generally, catarrhal deafness is as common in the richer as in the poorer classes, despite the greater exposure of the latter to acute diseases. Such conditions as acute middle-ear suppuration and mastoid empyema, although compelling attention and urgent of treatment, do not work so much havoc upon the hearing as does a neglected chronic catarrh. The great majority of cases of deafness is directly resultant from acute or chronic inflammations, and it is, therefore, to these that I direct your special attention rather than to the rarer forms of defective hearing, although I shall refer later to some of these.

If we take a large number of chronic deaf adult cases we shall find that in the majority the condition began in the first years of life. At that time treatment is certain, and it is the period at which the general practitioner is in close touch with the child and has it in his power to do a very great deal to teach parents the early symptoms of middle-ear complications and their results if neglected. He should use his best endeavours to instruct the public that earache, even when the attacks are transient, is not due to such causes as teething, neuralgia, and worms, as has long been a popular superstition, but that it is a middle-ear congestion, due to conditions in the upper respiratory tract and, as such, calling for careful and immediate attention. It cannot fail to strike anyone who

possesses a large experience of deaf work that it is a very common fact amongst adult patients with chronic catarrhal deafness that they suffered from recurrent attacks of earache in early years. These attacks disappear as time goes on, but the ear which is thus affected later develops permanent changes in its mucous lining, or, may be, is invaded by a suppurative process connected with some more active infection. Such an ear seldom or never regains completely its function unless the post-nasal space is restored to normal, and the balance of atmospheric pressure is reconstituted in the tympanum through the Eustachian tube. These premonitory symptoms, manifested in the majority of cases, are too frequently disregarded, not only by parents, but by the profession.

HYPERTROPHIC TONSILS AND ADENOIDS.

This brings us to the consideration of what condition is found in the naso-pharynx of children who suffer in the way I have described. The shape and relative size of the nose and naso-pharynx change very much between the period of their development in the fœtus and the form which they assume permanently in later life. These changes have a very important influence upon the pathological conditions which may develop in this region and make any form of obstruction therein a much more serious matter in young children than in adults. The function of the nose, primarily the seat of the special organ of smell, is in man chiefly respiratory. That part of the mucous membrane which is concerned with olfaction is confined to a patch of epithelium of about the size of a threepenny-piece and of a yellowish colour, situated high up, just above the middle and in front of the superior turbinate body. The whole of the remaining mucous membrane, with its many folds and reduplications, its complicated and elaborate blood, lymphatic, and glandular arrangements, is wholly respiratory in function. The width of each nasal chamber is relatively less in the infant than in the adult; hence nasal obstruction is more serious, not merely because of its relatively greater interference with respiration, but also because the obstruction causes a decided interference with sucking. The septum nasi is relatively thicker in the infant, the naso-pharynx at birth is relatively long and shallow, and the Eustachian tubes are more patent and have less prominent cushions. The great cause of nasal obstruction in children is due to hypertrophy of the pharyngeal tonsil—*adenoids*—and the first step in the prevention of otitis media in infants and young children is the consideration of the problems connected with lymphoid development.

Hypertrophied adenoid tissue may be congenital. In children six months old, if there is much adenoid hypertrophy, it may obstruct the larynx, for the naso-pharynx is then relatively low and the larynx relatively high. It may also, from its relatively low position, make deglutition difficult. It has been recently pointed out that a frequent symptom of adenoids in children is the existence of gastric derangements due to the swallowing and nocturnal trickling into the stomach of the thick and acrid mucus secreted by the adenoid mass. A case of my own will serve forcibly to demonstrate this fact. A little girl, aged seven years, suffered, among other adenoid symptoms, from frequent attacks of dyspepsia, with morning nausea and vomiting. Since the removal of a large mass of adenoids, some five or six years ago, these attacks, which had been considered to be quite unconnected with the growths and had been treated unsuccessfully by divers methods, have entirely ceased.

Now, lymphoid tissue in the naso-pharynx is a normal condition in every child, but when the child is predisposed to hypertrophy of that tissue (and the condition often runs in families) the general practitioner has a grave responsibility on his shoulders. He should give careful consideration to and should be prepared to advise parents on the subjects of dress, exercise, ventilation, food, the care of the teeth, the various irritations of the mucous membrane of the mouth, upon general hygiene and metabolism. He should warn them of the effect upon the naso-pharynx and its lymphoid tissue of the infectious diseases of children as well as the results upon the faucial and pharyngeal tonsils of simple acute infections. If this advice is conscientiously and firmly given, it will do much towards the prevention of hypertrophy and the evils which follow in its train.

When adenoid tissue is associated with recurrent attacks of earache or with otorrhœa, with follicular pharyngitis and nasal obstruction, there is no need of posterior rhinoscopy or palpation to know that the condition has become pathological. Another popular superstition that is dying, but dying hard, is that enlarged cervical glands are due to "scrofula." Until recently I thought that the very word "scrofula" was a thing of the past with the profession; at any rate, although in the lay mind it is a mysterious entity that has some vague connexion with tubercle, no one has ever been able to give me a satisfactory definition of what "scrofula" really is. But lately I have heard it used quite confidently as describing a condition that is apparently inevitable in childhood by various medical men who, in these days of cheap text-books, post-graduate courses, and voluminous literature, certainly ought to know better. Here, again, when the practitioner meets with this condition of so-called "scrofulous" glands, he can do much by pointing out that they are due in reality to the absorption of toxins from inflammation of the faucial and pharyngeal tonsils. Here I would point out that adenoids and tonsils being similar structures the former are just as liable as the latter to infection of their crypts and to become septic. I look upon this tendency to septicity as one of the gravest features of tonsils and adenoids and their influence. Except in very young children, where they cause obstruction by their size, hypertrophic tonsils and adenoids are not of such grave importance merely on account of their hypertrophy as when they become septic. De Ponthière insisted upon this in a valuable paper read in 1909 to the French Otological Society. In that paper he pointed out that, in some cases of chorea, the condition was kept up and probably initiated by chronic septic tonsils and adenoids. I might add that de Ponthière worked carefully at the subject for some 12 years before he published anything upon it, an example worthy of imitation by others.

As regards the effect of adenoids upon the middle ear, I would ask you to bear in mind that they act in two ways. By causing obstruction to nasal respiration by their mass and, when septic, by infecting the tympanum through the Eustachian tubes. Mere obstruction by mass is likely to have serious results upon the ear in younger children, whose post-nasal spaces are small and undeveloped. Obstruction by mass also interferes with the function of the palatine muscles, which normally open the Eustachian tubes and ventilate the middle ear. Important as this is, it is septicity which has the gravest results; the frequent catching of colds, during which the child becomes deaf from extension up the Eustachian tubes, is the common complication of adenoids.

OPERATION FOR ADENOIDS.

This leads me to speak of the adenoid operation. Long experience has brought me to the opinion that this procedure is one which is frequently the worst performed of all the simple manipulations of surgery. After the age of four years, true adenoid hypertrophy does not recur if properly removed, yet one frequently sees cases in which symptoms have persisted after operation and, on investigation, it is found that the growths have never been efficiently taken away. To the looker on, the removal of adenoids and tonsils is a very simple and easy affair, but this is one of the instances where the looker-on does not always see most of the game. The result of such imperfect surgery is disappointment for both operator and parent and unmerited discredit for the operation. In operating with forceps it requires a good deal of practice before the surgeon knows thoroughly well what he is doing in the post-nasal space. The cradled curette is a cleaner and more efficient instrument and the forceps are rightly falling into the limbo of the obsolete. There is, however, a wrong way as well as a right way of using the curette. Inexperienced operators do not appreciate the fact that, to be successful with this instrument, the front of the curette should be felt to touch the nasal septum and the fenestra pressed well against the pharyngeal roof, before sweeping it backwards. If the former is not done the most anterior portion of the growth is left, whilst if one fails to push the instrument well home the adenoids are merely shaved and not removed. No surgeon should consider himself efficient at removing adenoids until he can bring away the whole mass in one sweep. Moreover, the curette, to do its work properly, must be kept sharp, for, if allowed to become blunt, it leaves tags which must be removed later. But it is not merely the removal of the central mass that constitutes

the operation. The fossæ of Rosenmüller—those recesses behind the Eustachian cushion—must be cleared thoroughly as well. As far as the effect upon the middle ear is concerned, it is not necessary to have any obstruction to nasal breathing from adenoids. Small amounts of lymphoid tissue about the ostia of the tubes, and especially in Rosenmüller's fossæ, will keep up an otitis media. In adults the posterior rhinoscope will reveal their results in adhesions passing between the Eustachian orifice and the pharyngeal wall, distorting the tubal opening and keeping up irritation. Therefore a thorough clearance of Rosenmüller's fossæ is essential to success, and neglect of this measure is the secret of most of the failures met with after the adenoid operation. Equally important is the after-treatment by respiratory exercises.

EAR DISEASE ASSOCIATED WITH ADENOIDS WITHOUT NASAL OBSTRUCTION.

I have just pointed out that there is no need to have any nasal obstruction from adenoids for them to affect the middle ear, and that small amounts of lymphoid tissue about the tubes are enough to cause and to keep up a serous otitis media in children; hence the cases of middle-ear involvement in which the real cause goes unsuspected. In the course of an investigation into a large number of school children with a view of ascertaining the occurrence of adenoids, which I published recently, 51 out of 1246 had ear complications. Every one of these children had adenoids. They were, however, by no means all of them mouth-breathers. It should never be forgotten that earache in children, especially before puberty, practically never occurs without the presence of adenoids in Rosenmüller's fossæ and that progressive catarrhal deafness in adults is always accompanied and caused by lessening of the normal movements of the Eustachian tubes, by swollen mucous membranes in the sides of the naso-pharynx, or by remains of adenoids, or adhesions resulting from them, which block the fossa of Rosenmüller. Adult catarrhal deafness is therefore due in the majority of cases to causes which have been in operation since infancy or childhood—neglected pathological legacies which are bound to show themselves in later life.

MIDDLE-EAR INFLAMMATION IN CHILDREN WITHOUT PAIN: TREATMENT OF ACUTE OTITIS.

Another fact to bear in mind is that in children under the age of 4 years an acute middle-ear inflammation may exist without any symptoms of pain. These cases must be familiar to every general practitioner. A child has a sudden rise of temperature, with restlessness and, possibly, symptoms of meningeal irritation, for which no physical cause can be discovered, but which improve after a discharge from the middle ear has become established. In such cases the practitioner should never fail to examine the ear before discharge has drawn his attention to it, when redness and bulging of the membrana tympani will reveal the true nature of the case and a clean incision, followed by the removal of the adenoids, will prevent the danger of a discharge which may become chronic as well as of possible permanent impairment of the hearing. Such cases without pain are common in broncho-pneumonia, in influenza, and in enteric fever, and their neglect is another potent cause of deafness in after life.

In measles and scarlet fever there is a high percentage of middle-ear involvement, and prompt treatment is necessary to avert serious consequences and fatal impairment of hearing. I may point out here that in scarlet fever the condition is often one of true bone inflammation rather than of simple middle-ear suppuration, and this accounts for the number of chronic suppurations with mastoid involvement and great destruction of tissues seen after this infectious fever.

In dealing with the acute otites of children the general practitioner should rely mainly upon the careful inspection of the tympanic membrane. Merely to watch the case without due consideration of the stage of the disease is to court disaster and allow to pass the time for interference, the ultimate result being serious and often irremediable destruction of hearing. There is always a time for prevention, and if not promptly seized it passes for good and all. I will sketch out what is, to my mind, the best course to pursue in simple cases. If the patient is seen before discharge has appeared incision of the bulging membrane, followed by mopping and the insertion of a light drain of sterile gauze carried to the bottom of the meatus, will relieve the condition and prevent natural perforation. It is usually better not to irrigate after incision. Clearance of the nasal passages by warm alkaline spray and benzoin inhalations will keep the naso-pharynx clear and the Eustachian tube open until such time as it is advisable to remove the adenoids. If, however, perforation and discharge have already occurred, and pain is a prominent symptom, hot irrigations, with inhalations of benzoin or menthol, confinement to bed in a warm room, and a mild cathartic will suffice. During the congestive stage, but only then, large irrigations every two hours of hot normal sterile salt solution are useful, followed by careful mopping, and the introduction of a drain of ribbon gauze to the bottom of the meatus. The tympanic membrane should be inspected frequently, and if the perforation is small and the discharge profuse, incision should be practised. Should discharge persist for more than ten or 12 days its continuance is due to some complication, and further frequent and large irrigation is inadvisable as conducive to the formation of polypi, adhesions, and the possibility of mastoid or intracranial complications. As soon as acute symptoms have subsided the naso-pharynx should be cleared, for in these cases it is not so much a question of a steadily progressive disease as of constant reinfection through the Eustachian tube, and it is only by attacking the primary source of these infections that exacerbations can be prevented. A middle-ear discharge is always a serious matter, and treatment should never be allowed to relax so long as there is a drop of pus in the meatus. Too early cessation of treatment is the secret of many intermittent otorrhœas, and most of the chronic suppurations of adult life date back to childhood. Once discharge has ceased, and measures taken to prevent recurrence, other treatment can be undertaken with a view to endeavour to restore or improve the hearing.

I have now said enough on the subject of the prevention of chronic deafness in the adult by prompt attention to the ear conditions of childhood. It is pre-eminently in this department of aural surgery that the general practitioner and the otologist can be of mutual help. With our advances in etiology and pathology it behoves us to turn aside from what I have already called end-results in order that we may do the utmost that our knowledge allows us to prevent the occurrence and to stem the progress of the acute and chronic inflammatory conditions which were the original causes of serious impairment of hearing—causes which lead in some cases to complete deafness and consequent acquired deaf-mutism. In the words of an American otologist, the aurist must be a practical rhinologist.

LESS COMMON CAUSES OF DEAFNESS IN CHILDREN.

It is incumbent upon me to speak briefly of some of the less common conditions which may cause serious deafness in children. These affect the internal ear and are chiefly, leaving out the exanthemata, meningitis (simple, tuberculous, and epidemic), congenital syphilis, and mumps. Little can be said as to the first of these. Congenital syphilis attacks the ear generally between the ages of 6 and 14 years, usually after the eye manifestations. So far as my own observations go, the eye symptoms usually precede the aural condition closely, but there may be a considerable interval of time between them, and although the ocular disease may come after the deafness, it is much less common for it to do so. Thus, in 32 cases under my own observation, the eyes were attacked first in 14 (43·7 per cent.), at the same time as the ears in 6 (18·7 per cent.), and after the ears in only 4 (12·5 per cent.), the relation being doubtful in 8 (25·0 per cent.). The points upon which I would specially insist are two: first, that the ear seems especially prone to be attacked in those in whom the general disease has been allowed to escape treatment in infancy; secondly, that unless treatment be prompt, nothing can be done to improve the resulting deafness. Therefore every infant with signs of congenital syphilis should be submitted to a vigorous course of treatment, in order that the prevention of this complication may at least be attempted. The labyrinthine complications of congenital syphilis are highly resistant to specific treatment, and it is by no means uncommon to find them making their appearance during the time when the eye condition is under appropriate treatment, and progressing to more or less complete deafness in spite of it. The only measure which gives any hope is pilocarpine injection at the first onset of ear symptoms. The serious nature of this condition is exemplified when I tell you that out of 500 deaf-mutes examined by me in the London County Council Deaf Schools,

17 out of the 225 acquired cases were due to congenital syphilis, a percentage of 7·5; Kerr Love found, at the Glasgow Institution, 1·8 per cent.; and Castex, in describing his researches into the causation of deaf-mutism in the Paris institutions, has mentioned only 18 cases out of 719 (2·5 per cent.). My figures therefore appear to be unusually high and speak eloquently as to the want of care in the prevention of this terrible complication of the congenital disease.

Mumps may cause deafness by involvement of the middle ear or of the labyrinth. Cases due to this condition are decidedly rare. The labyrinthine involvement is due apparently to a metastasis, or to a primary localisation of the disease in the cochlea. Boot published, in the *Journal of the American Medical Association* of Dec. 5th, 1908, an analysis of 51 cases, including two from his own observation, and his paper well repays perusual. The time and mode of onset of acute labyrinthitis in mumps vary; the symptoms—rapid deafness, with or without vertigo and nausea—appear usually from the first to the third day of the primary disease, but they may be as late as the sixth or seventh and have been known to precede it. The general practitioner should never forget this serious complication of mumps, for everything depends upon prompt treatment, and pilocarpine and iodide of potassium have been found to give excellent results.

DEAF-MUTISM.

In conclusion, I must revert once more to the subject of deaf-mutism, which was touched upon at the beginning of this lecture. I cannot go into the causes of deaf-mutism here, but I would recommend to your attention an admirable paper by Mackay, published in the *Practitioner* for October, 1908, in which it is remarked that: "Of all the practitioners of medicine and surgery, the general practitioner is the one who can do most to prevent it. It is his advice that the public acts upon, when it acts upon expert advice at all in things pertaining to health, and it is his aid that the afflicted public seeks first, when it awakens to a sense of its aural disabilities."

There are two great classes of deaf-mutes, the congenital and the acquired. As regards the latter, the general practitioner can diminish their number if he will but give practical attention to the treatment of ear conditions in children (the salient points of which I have endeavoured to lay down), and especially to those occurring in the course of the general diseases. But it is not alone in acquired deaf-mutism that his duty calls him to activity. When the history, and especially the family history, of the congenitally deaf is examined two facts come into prominence, heredity and consanguinity. Taking first heredity, it will be found that opinions differ widely, but there is no doubt that the view that heredity plays a prominent part is coming to be much more generally held. It is not sufficient to take into consideration the immediate effects of deaf-mute parentage, but one must look much further and include, not merely the direct ancestry, but the collateral branches. If this is done, it will be found that the abnormality of deaf-mutism appears repeatedly. Heredity is less frequent in the direct line (parents and grandparents), more frequent in collateral branches (great uncles and aunts, uncles and aunts, grandparents' cousins, parents' cousins, cousins and second cousins), and most frequent among the brothers and sisters of the deaf-mute.

The effect of consanguinity is also much disputed, but it is undoubted that it is a potent predisposing cause. I can only quote here a very limited number of facts to demonstrate this. In Denmark, according to Mygge, consanguineous marriages may be supposed to represent about 3 to 4 per cent. of all marriages, yet 6·75 per cent. of the deaf-mutes admitted to the Royal Deaf and Dumb Institution in Copenhagen were the result of such marriages. Deaf-mutism is more common amongst Jews than amongst Protestants and Roman Catholics, and more common amongst Protestants than among Roman Catholics. This follows the customs prevailing in these three sects in regard to marriage, for inter-marrying largely occurs amongst Jews, and Roman Catholics discourage cousin marriages, whilst Protestants permit them. It is, however, only right to say that there have been brought forward facts which tend to deductions of an opposite nature to those just quoted. Possibly, however, this anomaly may be explained when the investigations into the relationships of the parents are more exactly conducted, as suggested by Mackay in reference to the marriage customs of the Fijians. It may be fairly stated, nevertheless, that something like 50 per cent. of the cases of congenital deaf-mutism are the result of marriages either (1) amongst those who have cases, either direct or collateral, in their families; or (2) amongst those who are blood relations. Here, then, becomes apparent another obvious duty of the general practitioner, and one which he will not infrequently have an opportunity of bringing into action. He should, whenever the occasion occurs, do all he can to discourage such marriages. It may be that when we, as a nation, are more alive to the urgent necessity for race culture, when we more fully realise that national wealth is not gold but healthy, normal citizens, we shall discourage consanguineous marriages in tainted families by law. Until then it will remain the paramount duty of every medical man to do his utmost in this direction and to foster in his patients the feeling that we have a bigger duty towards future generations than we have to ourselves.

Lastly, there is a duty to congenital and acquired deaf children, whose defect, it must be remembered, lies, in the majority of cases, only in the absence of the sense of hearing. That duty is to impress upon their parents that to obtain the best results from education by the oral system (which is the only system which can give the deaf child anything approaching normal intercourse with his more fortunate brethren), such education must begin as early as possible, whilst brain and larynx are still plastic; that attendance at the deaf school must be as regular as possible; and that the oral training carried out by the trained teacher of the deaf must be continued, supplemented, and amplified at home by treating the child as a *speaker* and not a *signer*.

ON THE VALUE OF BLOOD-PRESSURE DETERMINATIONS IN THE TOXÆMIA OF PREGNANCY.

BY HUBERT J. STARLING, M.D. LOND., D.P.H. CAMB.

UNDER the term toxæmia have been included a number of morbid conditions which occur in pregnancy and which are apparently due to the circulation of toxic substances. As to the origin of these substances opinions are divided as to whether they are derived from the fœtus or the mother. Ewing and Wolf divide pregnancy into six different classes[1]: (1) normal pregnancy; (2) disturbed metabolism with or without clinical symptoms; (3) toxæmia with vomiting as its chief symptom; (4) the pre-eclamptic state; (5) eclampsia; and (6) toxæmia ending in acute yellow atrophy of the liver. They state that "we find reason to believe that all these morbid states arise from one fundamental disturbance, yet there is clinical and practical value in separating them into groups." They arrive at these conclusions from definite pathological changes found post mortem and from an extensive series of observations made on urinary analyses. They also define the relation of the changes in urinary nitrogen to the pathogenesis of the disease. Their work, however, is far too exacting and difficult to be carried out by the general practitioner, or even by the professing obstetrician, without much time and labour being spent in the laboratory. Two of their conclusions, however, are of great general interest: (1) that dangerous toxic states may exist with great metabolic disturbance without the presence of albumin in the urine; and (2) that since the hypobromite method for estimating urea also liberates the nitrogen from such precursors of urea as leucin, tyrosin, ammonia, &c., a normal or high percentage of urea as estimated by this method is of no value as a guide to the condition of the metabolism. In view of the danger both to the mother and child involved in the several grades of this toxæmia, it is of extreme importance that the practitioner should have some means at his disposal of judging of the severity of the condition, of its onset, and of the probable danger either to mother or child of allowing pregnancy to continue. Only by such knowledge is it possible to take measures either for the treatment of the condition or for the termination of pregnancy.

[1] Ewing and Wolf: American Journal of Obstetrics, March, 1907.

Ewing and Wolf have carried out a large number of very laborious estimations of the different constituents of the urine in a number of cases of toxæmia of pregnancy. In spite of the care exercised in these investigations their results do not seem to promise that any definite indication as to the course of the disease will be obtained from a study of the urine. The results of their analyses either fall within normal limits or, when divergent from normal, can be ascribed to the secondary incidents of the toxæmia—e.g., to the starvation caused by the persistent vomiting. To the practitioner the negative character of these results may almost be regarded as a source of satisfaction, since it would be impossible to carry out in general practice the laborious series of analyses conducted by these observers. In a paper by Underhill and Rand the following among other conclusions are arrived at:[2] "The composition of the urine in pernicious vomiting is strikingly similar to that which obtains in the urine eliminated during inanition. In both instances the characteristic perversions are changed relations in the excretion of urea and ammonia, and at times in the output of creatinin and creatin. The determination of nitrogen, ammonia, creatinin, and creatin in pernicious vomiting is believed to be of greater value than the more elaborate methods suggested by others. It is suggested that the changes in the urine in pernicious vomiting of pregnancy are induced by the accompanying inanition. Evidence tending to substantiate this view is furnished by the observation that the perverted urinary nitrogen relations rapidly resume the normal on administration of food without necessarily exerting any influence on the pathological state of the patient. In pernicious vomiting of pregnancy, where inanition is a significant factor, the administration of energy-yielding foodstuffs is of greater value than the giving of foods rich in nitrogen. Carbohydrate supply is apparently the factor determining the relative output of urea and ammonia, since in pernicious vomiting of pregnancy, as in inanition, the administration of this substance by mouth or by rectal enemata is followed by a distinct tendency towards a resumption of the normal elimination of these compounds."

All authorities are, however, agreed that, at any rate in its grosser forms, the toxæmia of pregnancy is accompanied by a high arterial blood pressure. I have taken advantage of half a dozen cases of toxæmia of pregnancy to find out how determinations of arterial blood pressure may be used as a means of prognosis and as a guide to treatment. In the following cases the total urine and the total output of urea in the 24 hours have also been estimated. Although in the absence of a proper determination of the nitrogenous intake these results cannot be regarded as of scientific value, or as giving accurate information as to the course of the nitrogenous metabolism, it will be seen that they are of considerable practical value in enabling us to judge of the course of the disease.

Blood pressure in normal pregnancy.—For the past five years I have made a rule of taking the blood pressure as often as possible of every pregnant woman under my care, especially in the last three months of pregnancy. It was quite impossible to secure identical conditions of observation in these cases, but the mere fact that most of the observations were taken, not on patients resting in bed, but in patients who either were working in their homes or else had walked to my consulting-room, would prove that these estimations of blood pressure were too high a reading rather than too low. In spite of the conclusions arrived at by Vogeler and other writers,[3] I am convinced that during the whole period of normal pregnancy the blood pressure is normal—that is, from 110 to 120 mm. Hg. Any rise of blood pressure above 125 mm. Hg. would make me suspect that the pregnancy was not quite normal and would put me on the look-out for some degree of toxæmia.

To demonstrate the value of estimating the blood pressure I might instance one case sent to me by Dr. Cleveland, a woman, aged 21 years, unmarried, primipara, eight months pregnant, with huge œdema of the legs extending to the top of the thighs. After walking one mile and then resting ten minutes her blood pressure was 118. Estimations of urine were taken and found to be normal; the woman kept at her work, the œdema remained the same, and her blood pressure was normal. After a week the patient was sent to bed and her very tight corsets removed, and in 24 hours the œdema had completely disappeared. Her blood pressure was normal 24 hours before labour.

Any rise of blood pressure at the commencement of, and during, normal labour is due entirely to the pain or muscular exertions consequent upon labour.

Nitrogenous output in pregnancy.—The nitrogenous output may be slightly increased in pregnancy, but there is always a positive balance corresponding to the growth of the fœtus and the maternal tissues. Sellheim states[4] that during the first eight days after birth the total urine is diminished about 20 per cent. below what it was just before birth. The output of urea is generally somewhat raised. It is small on the first and second days after birth, rises on the third to the fifth day, then gradually diminishes. The alterations, however, are not large. It will be seen that in all the cases which I have to record both the blood pressure and urinary secretion, as well as the output of urea, exhibited deviations from the normal, and varied with the course of the disorder. A study of these cases, however, shows that we can divide them at once into two groups.

Group 1.—Sthenic in type, characterised by increase of blood pressure, which may be detected as early as the third or fourth month of pregnancy, not necessarily preceded by persistent vomiting or marked symptoms common to the first three months of pregnancy—slow strong pulse, heart enlarging, apex beat travelling outwards, diminution in quantity of urine passed with gradual suppression of urine, percentage of urea only slightly decreased, specific gravity not necessarily low, large quantity of albumin in urine, increasing œdema of the tissues, ending in eclamptic convulsions and death of fœtus. (The death of fœtus probably due to mechanical causes—i.e., the convulsions of the mother.) Subsequent to labour tardy elimination of toxins, often accompanied by albuminuric retinitis and permanent damage to renal and other structures.

Group 2.—Asthenic in type, much more gradual and insidious in onset, general malaise and fatigue, increased output of urine, very low specific gravity, slight trace of or no albumin in urine, no œdema, no casts in urine. Blood pressure slightly raised (due probably to cyanosis owing to inefficient circulation) or not altered; rapid, feeble, or intermittent pulse; finally great prostration and symptoms of profound toxæmia, gradual death of fœtus from toxæmia. Temporary recovery if fœtus dies in utero, speedy and apparently complete recovery after delivery has taken place.

The following are notes on cases:—

CASE 1.—An unmarried woman, aged 23 years, eight months pregnant, primipara. She was admitted into the Norfolk and Norwich Hospital under the care of Dr. S. H. Long, by whose kind permission I am allowed to publish these notes. Her mother and sister suffered from eclampsia in their first pregnancies. The patient was a strong healthy girl; œdema of the legs began at the sixth month; the output of urine greatly decreased for three days before admission. On admission on Jan. 16th, 1906, there was universal œdema, the urine was almost solid on boiling, and she passed very little. Labour began at 8.30 P.M. and continued all night with much distress and screaming. On the 17th, at 9.30 A.M., she had a typical eclamptic fit lasting about three minutes; forceps were applied at 10.30 A.M., and a recently dead well-formed child delivered. Subsequently the patient suffered from severe headache, complete blindness, œdema of the conjunctivæ, and well-marked retinitis with multiple hæmorrhages into the deeper layers of the retina. The patient made a good recovery. Sight returned about Jan. 27th; the urine contained albumin until after her discharge from hospital on Feb. 20th, 1906; the patient did not return to work until July, 1906. She was seen again in February, 1908, and her eyes were examined by Dr. A. Greene of Norwich, who stated that "considering the large amount of degenerative disturbance at the macular region it is remarkable that the patient can get as good vision as she does; ..... a considerable portion of the improvement is due to the most peripheral portions of her fundus becoming educated to finer use." The patient consulted me on several occasions in 1910 for eczema, persistent headache, rapid pulse, and general weakness. I think that there is no doubt but that her kidneys would show granular degeneration.

CASE 2.—A married woman, aged 24 years, a primipara. There was no previous history of importance. In October, 1907, she was 8 months pregnant. There was great œdema of the legs and thighs, the eyelids were swollen, and there were headache and dyspnœa. The apex beat was in the fifth space in the nipple line; the first sound was long, and the second sound was very loud. The pulse was 74, blood pressure was 162 mm. Hg after resting for 10 minutes. The urine was of specific gravity 1016, and was almost solid with albumin on boiling. The patient was sent to bed and put on milk and carbohydrate diet, 4 pints of fluid daily, and bicarbonate of soda 1 drachm four times a day. During the next few days the condition improved and the œdema diminished. On Oct. 11th the patient was seen in consultation with Mr. Everett; the apex-beat was three-quarters of an inch external to the nipple line; the pulse was 90, hard, and persistent; blood pressure was

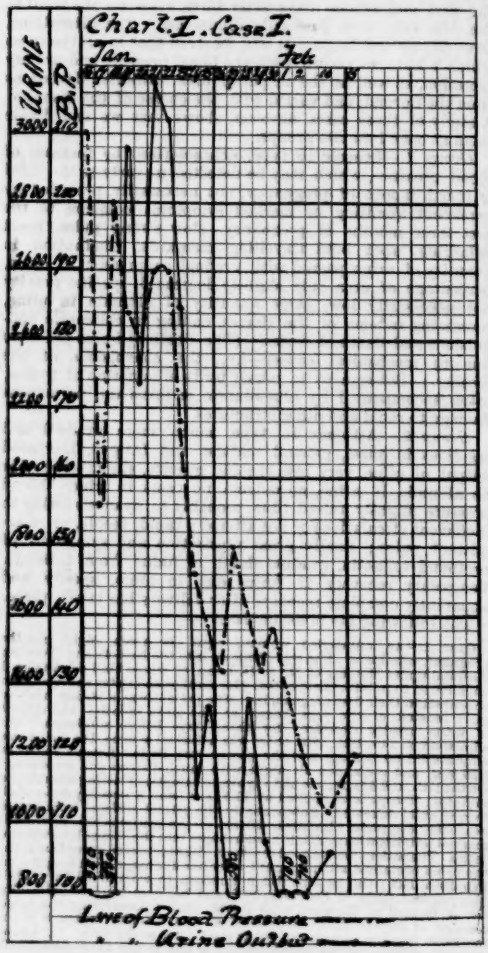
[2] Underhill and Rand: Archiv Int. Med., January, 1910.

[3] Vogeler: American Journal of Obstetrics, vol. lv., No. 4. Cf. Stengel and Stanton: University of Pennsylvania Medical Bulletin, vol. xvii., No. 7.

[4] Sellheim: Nagel's Handbuch der Physiologie.

198 mm. Hg, and headache was intermittent. There was slight sickness. Œdema of the vulvæ was so great as nearly to prevent vaginal examination. 1080 cubic centimetres of urine were passed in 24 hours; it was nearly solid on boiling and of specific gravity 1010; urea, 16·2 grammes in 24 hours. Immediate delivery was advised, but the patient would not consent to it. Pregnancy went on to full term and the patient was delivered normally on Nov. 19th. The child was in good condition. Six months later the patient was still in a very poor condition of health, anæmic and weakly. The urine contained 1½ parts per 1000 of albumin and was of specific gravity 1015; urea 14·5 grammes in 24 hours; amount 1200 cubic centimetres.

CASE 3.—A married woman, aged 24 years, primipara. On Jan. 28th, 1908 (within one week of expected confinement), the legs, thighs, and vulvæ were swollen enormously, each vulva being of the size of a full-term child's head. She had headache and backache. Urine dribbled away all day and contained admixed blood. A catheter specimen was almost solid with albumin. Blood pressure was 168, and the pulse was 80. The second heart sound was sharp and loud. The patient was ordered 40 grains of thyroid gland. On Jan. 29th blood pressure was



152 and the pulse was 86. 40 grains of thyroid gland were given. On the 30th blood pressure was 172 and the pulse was 84. 60 grains of thyroid gland were given. On the 31st blood pressure was 170 and the pulse was 88. 60 grains of thyroid gland were given. The œdema of the back and legs improved, but the vulvæ were enormous. There was no headache, but the skin was hot and dry. There were no signs of perspiration. On Feb. 1st labour took place quite normally; forceps was applied to bring the head through the vulvæ, and the perineum was torn nearly to the rectum. No thyroid was given on this date. On the 2nd blood pressure was 182. 30 grains of thyroid were given. The pulse was 92. The patient was very ill and seemed none the worse for the labour. On the 3rd blood pressure was 172 and the pulse was 96. There was some sweating during the past 12 hours. 20 grains of thyroid were given. On the 4th blood pressure was 168 and the pulse was 100. 20 grains of thyroid were given. The urine was quite free from blood; it contained 50 per cent. albumin on boiling. On the 5th blood pressure was 160 and the pulse was 96. 20 grains of thyroid were given. The œdema had quite disappeared. On the 6th blood pressure was 148. 10 grains of thyroid were given (last dose). On the 13th blood pressure was 100 and the pulse was 84. There was no œdema and the perineum was well healed. The specific gravity of the urine was 1010; there was no blood, only a trace of albumin; urea 0·015 per cent. On the 27th blood pressure was 100. There was no albumin in the urine, the specific gravity of which was 1012. This patient was seen again in July, 1910; she was in perfect health and the urine was normal.

CASE 4.—A married woman, aged 24 years, a primipara. She had had one miscarriage at the sixth week. There was no history of eclampsia in the family. She had had acute rheumatism twice. No endocarditis was present. There was no history of previous renal trouble. The thyroid gland was always a little enlarged. During the first three months of pregnancy continual nausea, headache, fatigue, and constipation were present. Blood pressure averaged 135 mm. Hg. From the third to the seventh month of pregnancy the patient was very well. Blood pressure taken once a week averaged 115 mm. Hg. Constipation was troublesome. On Sept. 29th (the beginning of the twenty-eighth week) the following symptoms came on suddenly: Headache, nausea, sickness, sharp attack of diarrhœa, and great fatigue. Blood pressure was 150 mm. Hg, and the pulse was 110. The urine contained a faint trace of albumin; the specific gravity was 1004. The patient remarked that fœtal movements were greatly lessened towards the end of this day, and they continued to grow less and ceased on Oct. 7th. The clinical as well as the subjective symptoms improved after about four days, and the patient apparently recovered from the sudden attack. On the 10th labour began and was completed normally. The child was well formed but had been dead some days. After labour there was very little hæmorrhage; the pulse was unusually hard and rapid, and did not regain its normal tension for 24 hours, when the uterine flow was well established. The patient's face and general complexion were red and cyanosed. Owing to tension of the breasts a dry diet had to be ordered after labour.

CASE 5.—This is the same patient as Case 4. She became pregnant six months after the birth of the stillborn infant. During this time her excretory powers had greatly improved and approximated to normal. During the first four months no symptoms of any note occurred, and the diet was of an ordinary character save that about three to four pints of fluid were taken daily. The specific gravity of the urine was about 1012. On June 22nd the specific gravity of the urine was 1008; the amount of urine in 24 hours increased to 2842 cubic centimetres (100 ounces) and the total output of urea decreased. All animal proteid was omitted from diet for 48 hours, and the patient got better. On each occasion (August 13th and 30th, and Sept. 11th and 24th) when the amount of urine passed in 24 hours was increased over the already high average output, so the symptoms (fatigue, headache, and nausea) augmented, so that when on Oct. 9th the output measured 1987 cubic centimetres and continued to increase, with a very low percentage output of urea, I was in no doubt that a crisis was approaching. The bowels had been kept fairly free throughout (about two stools daily), but on Oct. 11th a sharp attack of diarrhœa occurred. The pulse was about 108. Fœtal movements had been strong, but from this date the normal movements ceased at times and were replaced by curious rhythmical mark-time movements. On the 12th diarrhœa was still present. The pulse was 116 to 120. Fœtal movements were less active, there were longer periods of no movement, and rhythmical movements predominated. The patient was very ill and tired. On the 13th the patient was feeling extremely ill. She had pains in the joints and back. The pulse was 130 to 136, running in character and intermittent. Her complexion was slightly cyanosed. The fœtal movements were much less, and then entirely rhythmical. On consultation with Mr. Everett a bougie was inserted into the uterus at 8 P.M. All fœtal movements had ceased and no fœtal heart sounds could be heard. The fœtus was thought to be dead. On the 14th the cervix was dilated digitally under chloroform and oxygen, and delivery took place at 10 A.M. The child was very cyanosed, flabby, and apparently lifeless, but after five to ten minutes respiration was started. The child's weight was 5 pounds 10 ounces. Both mother and child did extremely well.

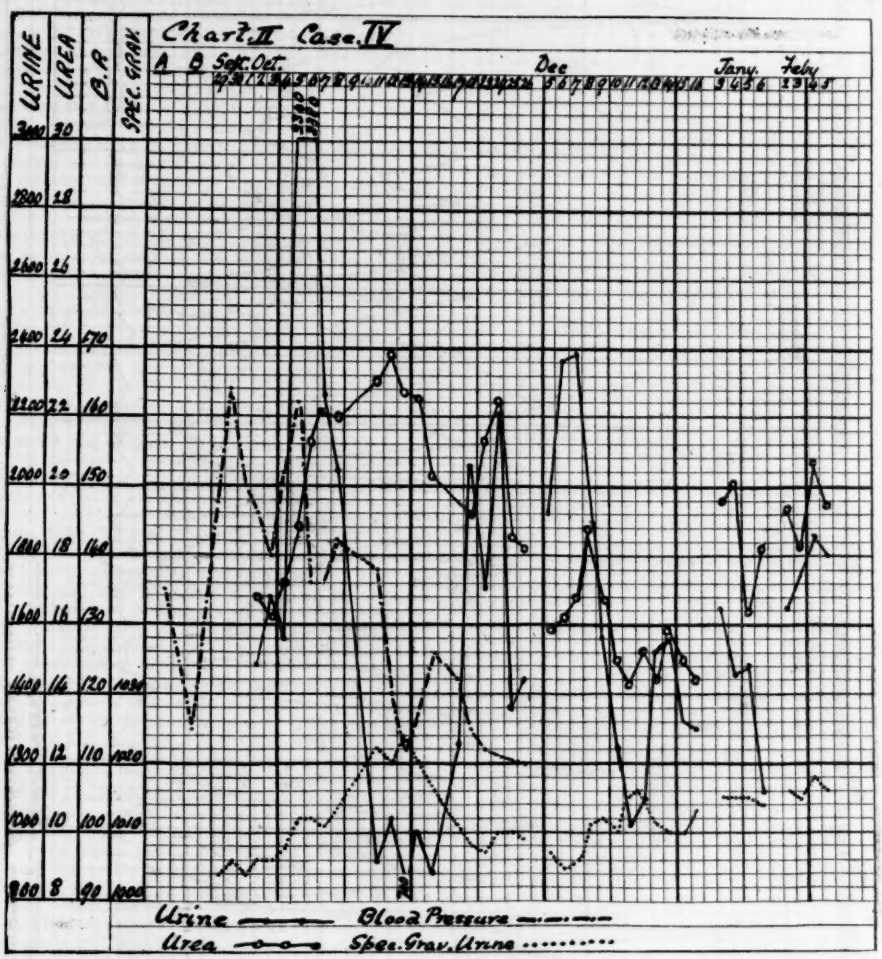
Discussion of Results and Indications for Treatment.

Group 1. Blood pressure.—It is apparent from the study of the first three cases with their charts that the most prominent symptom was a great rise of blood pressure. In each case no blood-pressure estimations were taken until the condition had existed for some considerable time. From other cases which I have had under my care, and from my observations on blood pressure in normal pregnancies, I have no doubt that if the blood pressure were estimated either as a routine method from time to time during the course of the pregnancy, or at least as soon as any abnormal symptoms (such as œdema) showed themselves, many of these cases by adequate treatment could be prevented from progressing to any serious degree. Any blood pressure above 125 mm. Hg in a pregnant woman at any time of her pregnancy should warn her medical attendant that the condition of his patient is abnormal.

In Case 2 considerable improvement took place, not only from the complete rest in bed, but also, in my opinion, from the change of diet. In these cases the whole circulatory system is responding to the strain put upon it by the circulating toxins, but it is obviously sound practice to lessen this strain wherever possible. This should be done: (*a*) By complete rest in bed, to give the heart as little extra work to perform as possible, so as to leave its energies free to cope with the unusual demands put upon it. (*b*) By giving a diet consisting chiefly of carbohydrates so as to leave the renal structures free to excrete the abnormal constituents that are circulating in the body. (*c*) By giving plenty of fluid, say 4 pints per diem, so as to dilute the circulating toxin and render it easier of excretion. As a point of

clinical experience, which is confirmed to some extent by experimental observations, large doses of bicarbonate of soda are beneficial in helping excretion, probably through preventing the tendency to acidosis, which exists in these and allied conditions of toxæmia. (*d*) The administration of thyroid extract should be tried, especially in the sthenic type of case. The dose should vary with the degree of toxæmia present, and its administration should be begun as early as possible. Dr. H. Oliphant Nicholson has recorded cases [5] in which the substance was of considerable value, not only in ameliorating the severity of the toxæmia, but also in aborting it in the early stages of the disease. To his writings I am indebted for the idea of using thyroid extract in this condition. In Case 3 enormous doses of thyroid extract were given, and not until five days after the commencement of its administration were any physiological effects observed, and even then its use was continued in smaller doses with benefit to the patient. The extraordinarily rapid recovery of this patient, and the early date after the confinement at which all trace of albumin had disappeared from the urine, I ascribe to the use of thyroid extract. Ewing in a recent paper [6] refers to the value of this treatment, and to other publications on this subject.

Finally, we come to the question of the termination of the pregnancy. Probably if these cases of eclampsia were seen and treated at an early period of their occurrence the majority of them could be either cured or at least so alleviated as to tide them over the confinement in safety. But in the cases that resist all treatment and are obviously getting worse an early termination is surely desirable. Cases 1 and 2 demonstrate the extensive effects of eclampsia, both with and without convulsions. Both patients are permanently damaged for life—debility, grave renal injuries, and damaged retina. If convulsions occur the mother runs considerable risk of a fatal ending, while the percentage death-rate of the child, in eclamptic convulsions, is also very high. In the case of a primipara I think it is of more importance to ensure the safe survival of the mother that she may undergo subsequent labours (when eclampsia is much less likely to occur) than to jeopardise her life and the life of the child in the first pregnancy in the hope of obtaining a full-term child.



Group 2.—In this group the estimation of the blood pressure is not so valuable as a diagnostic sign. But even in Case 4 it was the high blood pressure (150 mm. Hg) which with the other symptoms called my attention to the state of the patient, and in Case 5 it is seen that, coincidently with the rise of the urea and urine output, and with the increased severity of all the symptoms, so the blood pressure rose, but not to any marked extent. But in this group there were other symptoms present which gave important information as to the nature of the case. In Case 4 the patient was in a fit and active condition of health and on a normal diet until the beginning of the twenty-eighth week of pregnancy. Then symptoms of some acute

[5] Nicholson: Journal of Obstetrics and Gynæcology of the British Empire, July, 1902, January, 1904.

[6] Ewing: American Journal of Medical Sciences, June, 1910.

Chart III Case V.
Blood Pressure
Urine Output
Urea
Spec. Grav. Urine

intoxication developed—sudden diarrhœa, sickness, great fatigue, and rapid feeble pulse. Then it was found that the urine was of a very low specific gravity and contained a low percentage of urea with a faint trace of albumin. The patient was put on carbohydrate and milk diet (about four pints of fluid daily), with bicarbonate of soda 1 drachm four times a day. No change took place in the urea output for 48 hours, but then the amount greatly increased (in spite of the greatly reduced intake of proteid), and this increase lasted for 14 days. After the confinement, when the patient was taking a much higher nitrogenous diet, the output of urea was much lower than normal. The total output of molecules was also decreased, as shown by the valency value of the urea, determined from the specific gravity of the urine. These data point, on the one hand, to the storing up of urea or its precursors, and its subsequent liberation when the patient improved on the carbohydrate milk diet, and subsequently to some definite, though not extensive, damage to the renal function as the result of the toxæmia. The condition of the mother, therefore, improved under the treatment, but measures were not taken in time to save the child, which died within three to five days after the first onset of the toxæmic symptoms. It is quite possible that some part of the mother's improvement was due to the death of the fœtus.

One of the most marked features in this and the succeeding pregnancy was the alteration in the movements of the fœtus in the uterus. Nothing was more definite to the mother than the gradual onset of the mark-time rhythm which appeared at varying intervals at first instead of the normal fœtal movements, then entirely replacing them, and finally ending in the complete cessation of all fœtal movements. This case subsequently became pregnant again (Case 5), and a successful conclusion was brought about. But much the same symptoms were manifested—general debility, large output of urine, very low specific gravity, very low total output of urea, ending in a serious condition with exaggeration of these symptoms, suggestive of profound toxæmia, and with such an effect on the fœtus as to leave no doubt of its death had pregnancy been allowed to continue another 24 hours. During this patient's second pregnancy complete rest was ordered during the seventh and eighth months, and the diet was nearly entirely a carbohydrate diet except for two to three pints of milk daily. Bicarbonate of soda was given in large doses from time to time until the urine became alkaline, when it was discontinued for a time, and to these measures I ascribe the successful conclusion of the case. The chart of this case is very interesting, showing, as in Case 4, the apparent retention of urea or its precursors during the period of toxæmia with the enormous output immediately after delivery. Coincidently the specific gravity of the urine rose from about 1004 to 1030.

These two groups of cases present features of such great difference that one is tempted to suspect whether they can be classed at all in the same category. There may be one explanation of this question. In the first group the response of the circulatory system to the circulating toxins is magnificent but expensive. It is possible that the second group of cases with the great difference in symptoms can be explained by the hypothesis that these symptoms are the result of the failure of the heart and circulation to respond to the demands made upon them. Whereas in the first group excretion of the toxins is forced upon the renal structures until they are so damaged that further function is completely inhibited, in the second group the breakdown occurs in the heart and circulation which do not respond, and the renal structures are permitted to have their own way and the toxins are not excreted to any extent. This hypothesis would account for the speedy recovery of the renal function in the second group of cases and the enormous output of urea immediately the condition (i.e., the pregnancy) was terminated.

That this is not the only explanation of the difference between these two classes of toxæmia is shown by the effect of thyroid extract on the sthenic type of case. Dr. Nicholson suggests that the condition is one of temporary athyroidism, and certainly the beneficial effects he has recorded as the result of thyroid administration prove that his suggestion is well founded. In Cases 4 and 5, the asthenic type, I administered small doses of thyroid (half a grain), but found that the symptoms were aggravated rather than improved. It is of interest to note that this patient has a slight simple enlargement of her thyroid gland. The blood pressure has been estimated throughout by means of Dr. C. J. Martin's modification of the Riva Rocci manometer. Except that I do not consider it necessary to divest the patient's arm of the clothing (except in very fat or muscular subjects) I have followed the same routine methods as set forth in my paper on arterial blood pressure in heart disease.[7] In one case I estimated the total ammonia in the urine by Sörensen's formaldehyde method, but the results are not sufficiently definite to promise that any light will be thrown on the course of the disorder by this means, at any rate without further investigation.

I am fully aware of the fragmentary and incomplete nature of these notes, but such as they are I hope they may be of some use to the general practitioner and perhaps throw some light on these obscure conditions. I do not put forth my conclusions as facts, but rather as factors which have proved of considerable use to me in the management of these cases, and I have approached the subject primarily from its clinical aspect. I feel very strongly that much can be done to alleviate these conditions and that treatment should be instituted at the earliest possible opportunity with a view to arresting their further progress. Pregnant women should therefore be encouraged to consult their medical attendants on the occurrence of the least sign of any abnormal symptoms, and the blood pressure should be estimated on every convenient occasion.

Norwich.

CÆSAREAN SECTION IN THE TREATMENT OF ECLAMPSIA GRAVIDARUM,

WITH NOTES OF A SUCCESSFUL CASE.[1]

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THE treatment of puerperal eclampsia is a subject of the highest importance to all those engaged in the practice of obstetrics, and is one where there is opportunity for considerable difference of opinion. This diversity of opinion, which has existed for many years, and still exists, is due mainly to the ever-changing views regarding the pathology of the disease. At present opinions as to treatment may be divided into two groups—(1) those favouring expectant treatment by drugs and other means; and (2) those favouring immediate and rapid delivery.

In the *Journal of Obstetrics and Gynæcology of the British Empire* for 1904, vol. v., p. 263, Comyns Berkeley has collected the opinions of a number of obstetricians as to how they would treat puerperal eclampsia. The extraordinary divergence in the methods recommended is the most striking feature in this essay. Certain of those who have replied to the questions asked recommend morphia, because it hinders metabolism, whilst others recommend thyroid extract, because it aids the metabolism of nitrogenous substances. Even in the use of purgatives there is absence of unanimity; some strongly advocate their use, others think they are harmful. There seems to be more agreement concerning abdominal and vaginal Cæsarean section, for both operations are regarded by the majority as being unjustifiable.

There are few who have had a sufficiently large experience of this disease to enable them to dogmatise over the methods of treatment. Indeed, the more cases of eclampsia one sees the more is one impressed with the great variability in the symptoms, course, and sequel of the disease. There is further considerable difficulty in appraising the true value of many of the methods of treatment, for from 75 to 80 per cent. of the patients recover, and our methods are as yet purely empirical, for we do not know the cause or causes of the disease. The toxic theory which now finds favour is nothing more than a return to the humoral pathology of our forefathers, and the treatment advocated in bygone days founded on that pathology compares favourably with the so-called modern methods. Unfortunately, under the term "puerperal eclampsia" more than one disease is included, for some writers seem to have grouped under this designation all those conditions in which fits occurred, and for this reason many statistical tables have to be disregarded.

[7] THE LANCET, Sept. 29th, 1906, p. 846.

[1] Delivered before the Section of Obstetrics and Gynæcology, Royal Society of Medicine.

I was led to consider anew the question of rapid delivery in this disease through having encountered in my private work a severe example of eclampsia gravidarum.

Notes of a successful case.—A lady, aged 26 years, a primipara, had been married for a year and had always enjoyed good health. She missed her first period in September, 1907, and was examined by her medical attendant when about six or eight weeks pregnant, and everything was reported to be normal. She went to the South of France and remained until February, 1908. On her return she was again seen by her doctor, when she expressed herself as feeling very well indeed, but unable to walk as far as she had been in the habit of walking. Early in April her father became seriously ill and ultimately died on April 30th. She was very much attached to her father and his illness came as a great shock to her and completely upset her nervous system. On April 19th her own doctor was sent for, and he found her complaining of indigestion, flatulence, and other signs of gastric disturbance. On April 20th she was not feeling very well all day, but was able to be up and about the house, although complaining of headache. Suddenly at about 8 P.M. without any warning she had two or three very bad fits. I was telephoned for and was told that in the last fit she had nearly died, and her condition was so bad that the case was hopeless. An injection of morphia was given. I reached the house about 10 P.M. and found the patient in a semi-comatose condition. Her face was livid and her eyelids swollen. A small quantity of urine was withdrawn by catheter and found to be solid with albumin. She had another fit in my presence. Her pulse was very rapid and her tongue had been badly bitten. I at once decided to empty the uterus and for this purpose she was put deeply under chloroform and an attempt made to dilate the cervix, first with metal dilators and subsequently with the gloved fingers. The cervix was elongated and extremely rigid; indeed, I had never encountered such a degree of rigidity. As little or no progress was being made with the dilatation, and as the fits were constantly recurring and of such severity that on more than one occasion she appeared to be dying, I decided that the best course to pursue was to empty the uterus by the Cæsarean operation. After having explained the situation to her husband and obtained his consent, a rapid Cæsarean section was done at 2.30 A.M. Whilst undergoing the operation the patient had one specially severe fit, and her own doctor, who administered chloroform, probably never had a more trying experience.

The operation presented no difficulty, but what was specially noticeable was the marked contraction and retraction of the uterus following on the removal of the fœtus and placenta. This not only facilitated the introduction of the sutures, but markedly diminished the amount of blood loss. The child, when extracted, was dead. The uterine wall was sutured with deep and superficial silkworm-gut sutures, and the abdominal wall closed by a continuous peritoneal suture of catgut, through-and-through silkworm-gut sutures not including the peritoneum, and a continuous catgut suture for the fascia. The through-and-through sutures were employed because the abdominal walls contained a considerable amount of fat. The instruments used were a scalpel, a pair of scissors, two pairs of artery forceps, a straight needle, and a curved needle. A smooth bedroom towel was cut into four pieces, which were then boiled and used as abdominal sponges. I wore rubber gloves.

After the operation the fits ceased, but the patient remained in a semi-comatose condition, the pulse being very rapid and feeble. At 8 A.M. she had a fit, for which a hypodermic injection of morphia was given. This was the only fit subsequent to the operation. The chloroform did not prevent the fits during its administration. She was inclined to be restless during the remainder of the day, but passed a "fair" quantity of urine. The pulse continued rapid and she had occasional vomiting. On April 22nd she passed a good quantity of urine; pulse rapid; was very restless, but did not complain of pain. On the 23rd she took some milk and water. Very restless. Urine 48 ounces; pulse very rapid. Complained of indigestion. Sleeping at intervals; perspired. On the 24th a good quantity of urine was passed; she was not so restless; pulse not so rapid. Complained of great pain in the chest. She took Benger's food well. On the 25th she was improving. The bowels acted well; good quantities of urine containing less albumin; pulse much slower and better. Slept fairly well.

The patient continued to make rapid progress. A few of the stitches in the abdominal wall were removed on April 30th and the remainder on May 2nd. The wound healed well. The tongue was badly bitten during the fits, producing two very deep lacerated wounds; these eventually healed under antiseptic mouth-washes, but were a cause of much pain and discomfort. The temperature on one or two occasions reached 100° F., but remained at the normal level at other times. During the convalescence she complained of indigestion and flatulence. A fish diet was given on April 30th. Her nurses left on May 26th. She sailed for Canada early in June and was reported to be quite well. The urine had been normal and free from albumin since April 30th.

I regret that it was not possible to record the case with greater detail, more especially the condition of the urine. Professor Osler kindly saw the patient on the second day after the operation. She has continued to enjoy good health, but has not again become pregnant.

Results of study of the literature.—I find that Van den Akker in 1875 is credited with being the first to perform with good result Cæsarean section in eclampsia, combined with contraction of the pelvis, although 100 years previously Lauverjat is alleged to have recommended the operation.

In 1889 Halbertsma advocated the adoption of the Cæsarean operation on the ground that it offered a good result to the mother and child and that it influenced so much the course of the disease. He recorded three cases, all primiparæ, aged respectively 26, 27, and 23 years. The first operation was fatal, the other two were successful. He concluded that if a woman in the last three months of pregnancy has eclampsia, medical treatment which endangers mother and child should not be prescribed, but operation should be done at once.

Kettlitz in 1897 gave a survey of the history of Cæsarean section for eclampsia up to and including the year 1896, and found in all 28 cases, giving a maternal mortality of 50 per cent.

Hillmann in 1899 described a case and gives the mortality in 40 cases as 52·5 per cent.

Streickeisen in 1903 made a further collection of cases and added 26 more, giving a maternal mortality in the 26 cases of 32 per cent.

Olshausen reported in 1900 that out of his last 250 cases of eclampsia he had performed Cæsarean section three times, two of the mothers surviving and all the children. In all three the fits ceased after the operation; the first, however, died six hours later from eclamptic coma. He advises the operation where the case is severe with a rapid succession of fits and where labour has not commenced. When the cervix is rigid and the os closed he prefers vaginal Cæsarean section.

The Transactions of the Edinburgh Obstetrical Society for 1903–1904, Vol. XXXIX., p. 194, contain records of two cases of eclampsia for which Cæsarean section was performed by Sir J. Halliday Croom. These cases appear to be the first and only examples recorded in this country.

The first case was a primipara, aged 20 years, who was between 8½ and 9 months pregnant. The operation, a Porro-Cæsarean section, was performed for the following reasons. 1. Her comatose condition and the rapid succession of convulsions. They continued to recur at intervals of less than five minutes. 2. The hypertrophy of the cervix. 3. The impossibility of dilating the cervix. 4. The contracted condition of the vagina as well as the pelvis generally. During the course of the operation there was no recurrence of the convulsions, the cyanosis was less marked, and the patient's condition generally improved. The patient died six hours later following a severe eclamptic seizure. The cervix is stated to have been absolutely undilatable either by fingers or instruments. Barnes's bags were quite useless, Hegar's dilators had no effect, and Bossi's instrument was not at the time known in this country.

The second case was a primipara, aged 46 years. Shortly before labour began she had an eclamptic seizure. The fits became worse with the onset of labour, the intervals shorter, and the coma profound. When seen by Sir Halliday Croom she had been unconscious for ten hours. The cervix was thickened and hypertrophied, projecting but slightly into the vagina, the fœtus was far above the brim, and the pelvis generally and uniformly contracted in the first degree. Dilatation was discussed and abandoned because there was no hope of dilating the cervix within reasonable time. It

was important to save the child for succession reasons. Cæsarean section was performed and a living child extracted. The mother soon regained consciousness, and remained conscious for two days, but on the third day she died from a low form of pneumonia, whether septic in origin or not remained doubtful.

These two cases with a fatal termination are the only instances recorded in this country where Cæsarean section has been tried in the treatment of puerperal eclampsia.

At the International Congress in Geneva in 1896 the opinion was expressed that "Cæsarean section as well as forceps delivery should not be regarded as ordinary operations, and are only justified when every kind of treatment has entirely failed." If this opinion is acted upon, then Cæsarean section would always have a high mortality, for the severe cases would alone be operated on, and then only after other methods of treatment had been tried and had failed.

Let us look, however, for a moment into the question of the maternal and fœtal mortality following this operation as compared with what happens after other methods of treatment. Streickeisen found in the 26 cases already referred to a maternal mortality of 32 per cent. Kettlitz calculated from his cases a mortality of 50 per cent. The mortality in eclampsia treated by other methods is given as about 20–25 per cent. The fœtal mortality in eclampsia generally is between 44 and 54 per cent. Streickeisen gives in his 28 cases of Cæsarean section a fœtal mortality of 30 per cent., and Kettlitz a fœtal mortality of 62 per cent. At present, therefore, Cæsarean section shows a high maternal mortality and a high fœtal mortality, and for this reason might be condemned. But was it not the same when this operation was first considered as an alternative to embryulcia in pelvic contraction, and when it was only adopted as a last resort when other methods of delivery had failed? The modern Cæsarean operation has been successful, not only from improvements in operative technique, but because the indications for the operation have been more clearly defined and acted upon without delay and before the patient has become infected through futile attempts to deliver. If this operation is to have a place in the treatment of eclampsia, we must be able to say, "This is a case for Cæsarean section," and have the courage to act promptly, for to delay until the patient is moribund and all treatment has been a failure is to court disaster.

Indications for operation.—What, then, are these? I would suggest the following: 1. When the fits are severe and recur in rapid succession. 2. When labour has not commenced. 3. When the cervix is difficult to dilate from elongation, hypertrophy, or excessive rigidity. 4. When the mother is moribund and the fœtus living and viable. 5. When labour has commenced and there is found considerable disproportion between the size of the child and that of the pelvis. 6. When the surroundings of the patient are suitable for a major surgical operation and when the services of an operator skilled in pelvic surgery can be obtained.

Eclampsia, as a rule, is not encountered before the second half of pregnancy, and becomes more frequent the nearer term is approached. Zweifel has, however, reported a case occurring in the third month. When it does occur in the latter half of pregnancy the disease is usually severe, a favourable termination occurring generally in the cases in which premature labour has rapidly supervened. In such cases, when the fits are severe and rapidly succeed one another, the indication is to empty the uterus at once, and this is best accomplished by the Cæsarean operation, in which the bleeding resulting therefrom is also beneficial.

Too much time should not be spent in such cases in attempting to dilate the cervix. Unless the cervical tissues rapidly yield to the methods of dilatation adopted, it is a matter of common experience that such manipulations tend to increase the fits, and unless the manipulations are carefully carried out there is the further risk of septic infection. The disease being so sudden in onset, often so severe in character and distressing to behold, it may even be the means of causing the medical attendant to be less careful in his aseptic technique, as preparations may have to be made in a hurry. Septic infection is a danger which must always be prominently borne in mind, for it would appear that eclamptic patients are even more susceptible, and septic infection has already claimed many victims in this disease The wearing of sterile indiarubber gloves should be made compulsory for all those who engage in the practice of obstetrics, and special precautions should be taken in eclamptic cases to disinfect all instruments used.

Whatever views may be held with regard to the first three indications for this operation, I think all will agree that when the mother is moribund and the child alive an attempt should be made to save the child's life, and that this is best done by a rapid Cæsarean section.

Eclampsia which is associated with disproportion between the size of the child and that of the pelvis is a further indication for this operation, as in such cases it is undoubtedly the most rapid method of effecting delivery.

The surroundings of the patient and the surgical ability of those in attendance are important factors in deciding what course is best to pursue in the interests of the patient. If a patient can be removed to a well-ordered hospital or nursing home and can command the services of a competent operator, the chances of her recovery will be increased; or if her apartment is clean and skilled assistance at hand, the simple technique of the operation may be carried out in her own home. Should, however, the patient be in an insanitary dwelling, and no skilled surgical assistance available, her interests are best served by the adoption of expectant methods of treatment. The Cæsarean operation under modern conditions is practically free from risk and is in my opinion much to be preferred to the other methods of rapid delivery, including vaginal Cæsarean section. It offers in properly selected cases the best chance of saving the life of both mother and child, although it must be remembered that death of the fœtus in utero is not infrequent on account of severe convulsions.

The effect of the operation on the eclamptic fits remains for consideration. The figures collected by Streickeisen show that out of 28 cases in 14 the eclamptic fits absolutely stopped; in 3 they were diminished; in 2 they remained unchanged; in 6 no particulars were given; in 2 Cæsarean section was made post mortem. Absolute cessation of the fits was observed in half the cases. It has further been observed by Dührssen and others that eclampsia ceases more frequently after artificial than after spontaneous evacuation of the uterus. Now from what we know of the effect of labour and attempts at delivery on the frequency and intensity of the fits we would expect that that method of rapid delivery which involves the least amount of disturbance to the uterus would be the most beneficial. Cæsarean section is undoubtedly the one which causes least disturbance, and its effect is borne out by the figures already given. But if it is only tried after other methods have failed much of its value is lost, for prolonged attempts at delivery aggravate the disease, make the patient's general condition worse, and diminish her chances of recovery.

Results of treatment.—With our present expectant methods of treatment the mortality stands at 20 to 25 per cent. Let us see what is being done to reduce it. In Germany, Dührssen, Bumm, and others strongly favour rapid delivery, but the great difficulty in arriving at a decision as to whether active treatment should be adopted is one of prognosis. It is a difficulty which arises in the whole group of diseases associated with convulsive seizures. You cannot say for certain whether a slight fit will be succeeded by one of like severity or whether a severe fit with fatal termination may not be the sequel. If it were possible to foretell with greater accuracy the course of the disease, it would be easier to indicate what treatment should be adopted.

Dührssen evidently adopts the rule, "After the first fit empty the uterus," and this I submit is a perfectly logical position to assume, but we know there are slight cases which get well quickly, or, if you will, readily yield to treatment, and that 75 to 80 per cent. of all cases recover. But we cannot foretell; we are prepared to take the risk, and this I think fairly represents our position at the present time.

Bumm, in a paper entitled "Die Behandlung der Eklampsie," gives the result of his experience of the treatment of eclampsia in Halle and Berlin. He states that he has been enabled to reduce the mortality from 25 to 30 per cent. to from 2 to 3 per cent., the former high mortality existing when expectant treatment was adopted. He believes that the quicker the uterus is emptied after the onset of the fits the better the prognosis. An achievement such as this vouchsafed by so high an authority is important evidence in favour of rapid delivery. As it is possible to collect statistics to prove either the advantages or the disadvantages of rapid delivery, it is, I think, more reliable if we can obtain

recent evidence from a competent observer who has had a considerable experience of the disease.

Herman, who has published so many valuable papers on the subject of puerperal eclampsia, is strongly opposed to rapid delivery, and in a paper published in the Transactions of the Medical Society of London, 1902, vol. XXV., p. 224, has collected a large series of statistics, showing the effect of delivery on the fits. I shall, however, only refer to his own cases. During the years 1891–1901, 38 pregnant women suffering from epileptiform convulsions were admitted into the London Hospital. Of the 38, 20 recovered and 18 died. He says: "This is a very large mortality, but it is partly due to the tendency of general practitioners to send to the hospital those cases that seem likely to end unfavourably. Thus two of the patients were admitted in deep coma and died a few hours after admission. In two others there was reason to believe that the fits were due to cerebral tumours, and the cases were therefore not puerperal eclampsia in the proper sense." A post-mortem examination was, unfortunately, not obtained in either case.

The statistics of the Glasgow Maternity Hospital collected by Munro Kerr for a period of 15 years show a mortality of 47 per cent. Jardine says: "The majority of the patients are sent in after they have been having convulsions for many hours. It is rare for us to get them within 12 hours of the first fit." If this is so, is it not due to the current teaching in this country that expectant methods of treatment should be adopted, and that when the case is beyond hope further advice is sought, and even then a continuance of this treatment is advised. The general practitioner looks for guidance to those who make a special study of obstetrics, and amongst the latter there is still considerable disagreement over the various methods of treatment.

After delivery the fits do not always cease; indeed, they may even occur for the first time during the puerperium, but they do cease in a considerable percentage of cases. It may, however, be fairly stated that the *termination of pregnancy exerts a more powerful and constant influence on the course of the disease than any method of treatment yet employed.*

Are we then to continue poisoning our patients with chloroform and morphia, or are we to hasten delivery? Of all forms of rapid delivery Cæsarean section would appear to be the best in this disease for the reasons already stated, and I would invite an expression of opinion on two important questions: 1. Is Cæsarean section justifiable in the treatment of puerperal eclampsia? 2. What are the special indications for this operation?

I think that in this country the time has arrived when a reconsideration of the propriety of rapid delivery in this disease should take place, and that definite indications should be laid down for the guidance of those who may be unfortunate enough to encounter in their practice severe cases of puerperal eclampsia.

Bibliography.—Halbertsma: Eklampsia Gravidarum eine neue Indikationstellung für die Sectio Cæsarea, Ref. Centralblatt für Gynäkologie, 1899, p. 901. Hillmann: Ein Fall von Sectio Cæsarea angeführt wegen Eklampsie, Monatschrift für Geburtshülfe und Gynäkologie, 1899, Band x., pp. 193–207. Olshausen: Sectio Cæsarea wegen Eklampsie, Centralblatt für Gynäkologie, 1900, p. 63; Sammlung Klinischer Vorträge, Neue Folge, No. 39, p. 328. Streckeisen: Centralblatt für Gynäkologie, 1903, p. 1072. Bumm: Die Behandlung der Eklampsie, Deutsche Medicinische Wochenschrift, 1907, Band xxxiii., pp. 1945–1947. Sir J. Halliday Croom: Transactions of the Edinburgh Obstetrical Society, 1903–1904, vol. xxix., p. 194. Herman: Transactions of the Medical Society of London, vol. xxv., 1902, p. 224. Zweifel: Centralblatt für Gynäkologie, 1895, pp. 1201, 1218, 1238, 1256, 1265, 1277.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox will publish the following books during September:—"Manual of Physiology," by Dr. G. N. Stewart, sixth edition; "Military Hygiene," by Lieutenant-Colonel R. Caldwell, R.A.M.C., second edition; "After-results of Abdominal Operations," by Mr. A. E. Giles; "Intestinal Surgery," by Mr. L. A. Bidwell, second edition; "Gynæcological Therapeutics," by Dr. S. J. Aarons; "Veterinary Parasitology," by Mr. R. H. Smythe; "Physiological Principles in Treatment," by Dr. W. L. Brown, second edition; "Syphilis: its Diagnosis and Treatment," by Colonel F. J. Lambkin, P.A.M.C.; "Pigs, Pigsties, and Pork," by Mr. G. Mayall; "Hæmoglobinuria," by Dr. A. Charpentier; "Some Considerations of Medical Education," by Dr. S. Squire Sprigge; "Accidents in their Medico-legal Aspect," by Dr. W. Douglas Knocker; and "Medical Supervision in Schools," by Dr. E. M. Steven.

NOTE ON THE CENTRAL ORIGIN OF SOME CASES OF SO-CALLED HEART-BLOCK.

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IN THE LANCET of June 18th, 1910 (p. 1706), appeared an annotation on a case of temporary recovery in Stokes-Adams disease recorded by Dr. H. C. Earnshaw in the *American Journal of Medical Sciences*. Dr. Earnshaw seems to accept the opinion, now, I believe, generally held, that this disease is due to heart-block, and that heart-block is due to actual disease of the heart muscle—gummatous, fibrotic, fatty, calcareous, as the case may be; but it is added, and this is the point I wish to speak about, that it is difficult to understand how temporary recovery can take place from lesions such as these.

It is because I have always had this difficulty in view myself that I am unable to accept the present doctrine of the cause of Stokes-Adams disease, at any rate as applicable to *all* cases of that disease. Typical cases of it are by no means common, but I hold that if a certain latitude be allowed for the presence and severity of its leading features the disease is by no means rare. However this may be, I happen to have had more or less under my notice for some 12 years a case of this kind, which was, I think, quite typical, and from it I long ago concluded that it was not cardiac in origin at all, but that it was epileptiform in its nature. As an epileptiform malady there is no difficulty in explaining Dr. Earnshaw's case.

I first saw my own patient in 1896. He was a man, aged 59 years, a strong, athletic, business man, who had epilepsy in his family. He had had gout twice in previous years, and for a year or so past he had had attacks of giddiness, faintness, and unconsciousness, mostly followed by vomiting as he came out of the attack. He had thus fallen and hurt himself. He had fallen off his bicycle; he had fallen faint when running after a rabbit; he had even when out shooting felt an attack coming on, had put down his gun, laid himself down, fainted off and come too again, and had been sick. He was at that time in good condition; keen for exercise; he had a steady heart; a pulse of 60; but his radial arteries were thick. From that time onwards he had many attacks, in most of which he probably was not seen by any medical man, but four or five months later in his natural health his pulse was still 60 and regular, and I have no doubt that it had remained so when out of his attacks at any rate, for the suggestion had been already made that his condition was due to muscular degeneration of the heart, and one cannot doubt that that organ had been repeatedly and carefully examined. In May, 1897, he had a bad attack which came on with giddiness, and went through the usual course. During it his pulse was timed at the wrist to be no more than 4 or 5 in the minute. He had at this time come out of the unconscious stage, and had, I gather, been sick. He was not white, nor was he in any clammy perspiration. His pulse slowly improved, and was fairly good next morning. On another occasion, coming round from an attack, he looked faint, and his pulse was almost imperceptible and very irregular. Fifteen months later I noted that he now easily tires; the pulse is rather irregular at the wrist—a few slow beats, then several quick ones—altogether 52 per minute. "It is hard," I say in my notes made at the time, "to say there is anything wrong with his heart. The systole at the base is a little rough, and the second sound possibly thick, but it has no ring; the first sound at the apex is also not quite clear, and yet there is nothing more than one often hears when listening to hearts that are presumably healthy." Up to this time the patient had been of active habit, between his attacks walking, shooting, &c. In August, 1900, he had an acute attack of gout, and about that time his pulse-rate permanently declined to from 24 to 36 per minute. His attacks now became much more frequent and passed more into a sort of *petit mal*, many occurring in the course of a day. One day he had an attack when my finger was on his pulse at the wrist. I think his pulse stopped *before* he became unconscious. It ceased for five or six seconds and then resumed a slower beat—20 in place of the 30 it had been before. At the end of the attack there came, as had so often happened before, eight or ten deep air hunger sort of pants. He then woke up, said he felt quite

well, and appeared to be quite unconscious of his attack. A further note at this time is that "his cardiac impulse is now outside the nipple, and the first sound is whiffy. My impression is that the innervation of the heart is less good than it was, and that the heart is giving out." However, he went on with a fairly steady pulse of 24, except in the attacks, in which his pulse has been found to be absent at the wrist or imperceptible for as long as 20 seconds. I also find him described as all right as long as the pulse is quick, which must mean 24 to 30, I suppose. Directly it stops he snores and pants. There is not much more to be said. Early in 1901 he had a bad fall in one of the seizures, and we thought he might have even fractured the base of his skull, for he had double vision for some time after. But his attacks gradually got much less frequent, and he could do more without fainting. He would saunter slowly round his garden, carrying a camp stool for occasional rests or threatenings. His bowels would act and micturition be performed without faint, his pulse remaining at 28, quite regular, and the impulse being an inch outside the nipple. He also complained from time to time of a tightness across the sternum, rather suggestive of angina pectoris, but he kept fairly well. A note made in November, 1904, says that he had had no attack for a year; his pulse was 30; and his heart sounds were fairly good, and in March, 1905, I noted, from what I was *told*, that he had had no faint for two years, and that he was leading a fairly happy although an invalid life. I saw him no more, but he died in 1908 or 1909 from some acute illness, probably pneumonic, and up to that time he had remained much as when I last heard of him.

Looking back upon this case, then, it lasted some 14 years in all, and although in its course some signs of cardiac weakness did develop, these were not present in the earlier stages, and he was a strong and vigorous man, who between his attacks was eager and able to take much physical exertion. So much so, that it was impossible to think that there could be any such serious heart lesion as muscular degeneration. He was seen by other physicians of great repute, and all I believe were in accord that his attacks were of epileptic nature. His brother I know to have been an epileptic.

I admit the difficulty of being sure in many of these cases whether brain or heart is primarily at fault, but for this one case I think we approach certainty. But there are two other groups of cases that I rely upon. I have seen several cases in people in the declining decades of life who have first shown signs of illness by way of brain, such as vertigo, temporary weakness of one side, or loss of consciousness or mumbling speech, and it has been only *after* these attacks that the heart has shown signs of these vagaries of action. I believe myself that these all start from some primary cerebral disturbance. There are other cases where a similar condition of things—giddiness, fainting, slow pulse—come on with an attack of gout, and they pass off as it subsides. But the strongest argument, as it seems to me, against the occurrence of heart block being the *cause* of such cerebral symptoms is that people with heart disease—that is, the extreme forms of valvular disease and muscular degeneration—*never faint*.

There is no rule that is absolute in medicine, but this one is very nearly so. A man may tumble down dead once and for ever, but he never faints off and wakes up again and again and again. Our conduits guard us against that, and in possessing this, their own particular function, they possess also the sometimes inconvenient susceptibility of being provoked into spasm by the media in which they run. A faint and a vertigo are therefore nearly always purely cerebral, and it is almost absolutely true that if a man wants his heart examined because he has fainted you can tell him without examining him that his heart will be found to be sound. Now this may seem almost an academic question, for with a heart beating at 24, more or less, and often irregular, in various ways, whatever way it commences it comes sooner or later to be a serious disease of the heart. And, of course, this is true. Nevertheless, the question is clearly a vital one, because upon it depends whether you are going to plan your campaign of treatment upon dealing with a damaged cardiac muscle or a debilitated or damaged nerve centre. And I have in mind here a very large question indeed. It embraces that large group of cases where after middle age in a perhaps strenuous life the heart quite suddenly becomes very irregular in action and remains so, very often whatever remedies are applied. These cases are all lumped now into dilatation till we are all sick of the word, and this in face of the obvious fact that there is often not a single symptom of failing heart except its peculiar action. The strained heart of the athlete and of the young adult I should like to see discussed from the same standpoint. Methinks it would rescue many a one from an enforced rest of many months that is detrimental to both mind and body.

There are indeed many conditions where at first sight it might be thought that the cardiac muscle was at fault, but from the course that they run there is great difficulty in continuing to hold that view.

Portland-place, W.

ENTERIC FEVER SPREAD BY MILK INFECTION, PROBABLY BY MEANS OF A CARRIER CASE.

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I WISH to bring to the notice of readers of THE LANCET an account of cases of enteric fever recurring in a hamlet in my district during several years, which cases were spread by milk, probably by infection of milk and water through a man who was employed as cowman and who had suffered from enteric fever some years previously. I will briefly state the facts in connexion with several outbreaks in this part of the district, and will draw attention to some of the difficulties that one meets in discovering the cause of such illness and in taking measures to prevent the spread of enteric fever.

The district affected is situated in Mid-Sussex, some 30 miles on the main line from London, and resting on the geological formation known as the Hastings Beds of the Wealden Series. A considerable quantity of alluvial deposit is found in the low-lying part of this area. The River Mole, a tributary of the Thames, drains the surface water from the land, and at one time the bed of the river no doubt was considerably larger than at present. Wells sunk to 25 feet deep yield in this soil plenty of water, but of a doubtful character. In this hamlet there are some 281 houses close together, and within a mile another collection of 25 houses, while in another direction there are 14 houses and in a lane some 9 houses, making a total number of houses of 329, with a total population of about 1645 persons. There are a few large residential houses, but many of the houses are small and occupied by railway men, mechanics, labourers, and small tradespeople. The water-supply now is obtained chiefly from two well-known waterworks companies, but until 1909 water was in many cases obtained from shallow wells. The drainage of the houses contiguous to one another is carried by pipe sewers to sewage disposal works, while the separate houses have cesspools, pail-closets, or privies. The milk-supply is obtained from nine separate dairymen: two have separate shops in the locality, six bring the milk from their own farms, while one brings the milk from a distance and retails it. Watercress is hawked round the district and is obtained from various sources, all of which have been inquired into.

From the year 1899 to the year 1910 (July) 58 cases of enteric fever have been notified in this area.

In 1899	4	cases of	enteric	fever	were notified in 3 houses.
,, 1900	3	,,	,,	,,	,, 1 house.
,, 1901	4	,,	,,	,,	,, 3 houses.
,, 1902	5	,,	,,	,,	,, 2 ,,
,, 1903	7	,,	,,	,,	,, 6 ,,
,, 1904	6	,,	,,	,,	,, 4 ,,
,, 1905	0	,,	,,	,,	,, 0 ,,
,, 1906	0	,,	,,	,,	,, 0 ,,
,, 1907	1	,,	,,	,,	,, 1 gipsy van.
,, 1908	0	,,	,,	,,	,, 0
,, 1909	19	,,	,,	,,	,, 12 houses.
,, 1910 (July)	9	cases	,,	,,	,, 9 ,,

The cause of the cases of enteric fever in the year 1899 was carefully inquired into at the time. The first case was that of a female servant in a villa, with four other residents. The water was obtained from a shallow well. It was

polluted, and there was a defective privy. The milk was obtained from a local milk-dealer. The milk-supply was at the time suspected, but a bacteriological examination showed the milk to be good. Two of the milk-dealer's children were ill in November of this year. The previous patient (the servant) was ill in October. The milk-seller kept six cows and supplied customers locally. His milkman who milked the cows and carried the milk round we will call F; the milk-dealer's name can be given as Mr. X.

In 1900 three cases of enteric fever occurred in one house at Three Bridges; the milk was obtained from Mr. X's dairy.

In 1901 four cases of enteric fever occurred at a large house; three of these patients were servants and one a visitor. All were supplied with milk from the occupier's own cows. F, above mentioned, had given up his employment with the local milk-seller, Mr. X, and was employed by Mr. R, the occupier of the large house, to milk cows. F began to milk cows in the spring of 1901 for Mr. R, and the first case of enteric fever to be notified in this house was in June, 1901. The drainage of this house was found to be defective and the water was polluted. It was suspected that an officer who arrived from South Africa in the early part of the year, and who was said to be suffering from dysentery, might have had enteric fever, but inquiry showed that the illness was not enteric fever.

In 1902 five cases of enteric fever again occurred in the house of Mr. X, the local milk-seller. The water-supply and drainage were found to be polluted and defective. F, the cowman, who had formerly been employed by Mr. X and had left to act as cowman to Mr. R, returned in the spring of 1902 to act as cowman for Mr. X. The first case of enteric fever to occur in this house in the year 1902 was on June 19th.

In 1903 seven cases of enteric fever were notified in six different houses; in these houses the water-supply was found to be polluted and the drainage defective. The milk-supply was from Mr. X's dairy.

In 1904 six cases of enteric fever occurred in four houses; in all these cases the milk was supplied by Mr. X. The milk-supply from Mr. X was stopped in this year. The water was the chief cause suspected.

In 1905, 1906, and 1908 there were no cases of enteric fever notified in the district; in 1907 one case, that of a gipsy dweller, was notified. The reasons given for no cases of enteric fever being notified during these years were because the rural district council had obtained a good supply of water from a waterworks company which was laid on under constant pressure, and it had also laid a sewer, so that the disposal of sewage was properly provided for. On looking into further details it was noticed that F, the cowman, was not employed as cowman from 1904 to 1909.

In the year 1909, 19 cases of enteric fever were notified in the district and six other cases were directly attributable to contacts outside the district. These cases occurred among persons who obtained their milk-supply from Mr. M, who had removed to his present dairy-farm from his previous premises occupied formerly by Mr. X, who sold his business in 1904 to Mr. M. The first case was an adult female, who at the time of removal to the infectious fever hospital was nursing an infant a year old. This infant, no doubt, contracted enteric fever and infected the woman who came from a distance to take the mother's place The child was then removed to a place on the South Coast; here two relatives contracted enteric fever. The child was suspected to be a carrier case. The fæces were examined, but with negative result. The child came home to the mother, who had returned from the hospital on August 22nd, 1909. It being suspected that the child had been ill I obtained a sample of blood, which on examination gave Widal's reaction in all dilutions. The child was given urotropin. Within three weeks of this baby's return a neighbour who washed the infant's clothes contracted enteric fever. Undoubtedly this baby contracted enteric fever from the mother and became a carrier case. Inquiries were made into the cause of this outbreak of enteric in the year 1909. The first case occurred on June 13th, and the second case on June 14th. Both of these patients had eaten some fried fish from a local shop, and it was found that a child had died at this house in February from "infectious diarrhœa." The later cases clearly showed that milk was the carrier of the infection, because in families where only one of the relatives drank any quantity of milk those were the only persons infected.

In several cases only small quantities of milk in tea were taken, or in some cases only butter, yet there was infection with enteric fever. The cases of enteric fever occurred on the following dates: June 13th and 14th; July 18th, 23rd, 23rd, 24th, 25th, 29th, 30th, and 31st; August 5th, 6th, 10th, 21st, and 24th; Sept. 5th and 22nd; Oct. 7th and 22nd. The ages of the patients were 26, 23, 27, 29, 38, 27, 25, 49, 6, 23, 17, 15, 21, 4, 1, 35, 18, 22, 7. Nine of these were females, 10 were males. All of these persons except three were removed to the isolation hospital. All the cases were clinically diagnosed as enteric fever, and Widal's reaction was shown to be present in every one. With the exception of three all recovered. All cases were treated with hemitol or urotropin before leaving the isolation hospital. Two cases no doubt contracted enteric fever from unstopping an inspection chamber which had become filled with sewage from an infected house. In two cases the illness appeared to have been secondary contact cases, otherwise all were primary cases and occurred only in separate houses. The milk-supply was suspected. The water-supply at the dairy was found to be polluted after two analyses. A defective drain and privy were found on the farm discharging polluted matter into a well.

The farmer M had about 37 milk customers and 25 butter customers; he kept 12 cows. One of his own sons who frequently drank milk contracted the illness. His two daughters disliked milk and drank tea without it; neither became ill. The son helped to milk cows with F, the cowman mentioned above. This farmer, M, removed to his new premises in May, 1909; he employed F, who had been cowman to X in 1899, to R in 1899, to X again in 1900, 1901, 1902, 1903, and 1904, and so soon as F was engaged as cowman enteric fever seems to have appeared. A magistrate's order was obtained under Section 4 of the Infectious Disease (Prevention) Act, 1890, to inspect together with a veterinary surgeon M's dairy and animals. The animals were found healthy. The milk was examined chemically and bacteriologically and found to be good. It was suggested that M should voluntarily agree to discontinue his milk-supply or remove his cows from the farm. This farmer agreed to discontinue the supply and fed calves with the milk. The milk-supply, after repairs had been carried out with regard to the drainage of the farm and a new water-supply had been obtained, was again sold in November, 1909. F was still employed as cowman.

F was suspected at this time to be a carrier of the illness; his urine was examined with one negative result and he was at that time acquitted. F's history was as follows. He was born in the year 1860 and had lived about this district all his years. In the year 1893, when Worthing suffered from an outbreak of enteric fever, this man contracted enteric fever while working in Surrey for a dairy farmer, who came from Worthing suffering from enteric fever. F was removed to the Redhill Infirmary. He was a baker until 1887, and then became a cowman, working, as has been stated, at X's, 1899; R's, 1900; X's, 1900 again; also in 1901, 1902, 1903, 1904. When X sold his business to M he left and was doing odd jobs from 1904 till 1909. He was a cowman again for M in 1909 and 1910. It is curious to note the absence of enteric fever in the district from 1905–1909. Was F the carrier case? Further examinations are being made of the man's fæces and urine and saliva. The man F has facial paralysis due probably to some injury of the seventh nerve at birth, with the result that saliva is constantly running from his mouth, and this might easily have been mixed with the milk. F has lived in his present house for nine years. This house has a pan w.c. connected with the sewer. No cases of enteric fever have been notified in the row of houses or the road in which F lives; previously to this F lived in lodgings and no cases of enteric fever occurred there. This man F used to work all day at the farm where he was employed, and returned home to sleep at night. On inquiring of him what he did when he wanted to defæcate or pass urine, his reply was that he never used a privy or w.c., but preferred relieving himself in the fields or woods.

At M's farm undoubtedly the privy was infected, and this in turn infected the well water. Did F at any time use this privy? In the year 1910 enteric fever again appeared in the district. On April 1st nine cases were notified, the ages of the persons being 37, 20, 9, 6, 27, 18, 21, 30, and 22 years. The dates on which illness occurred were as follows: April 1st, May 1st, 16th, 14th, 22nd, and 18th, and June 4th, 11th, and 30th. They were five males and four females. All

these persons had milk from M's dairy farm. Two of the men drank one or two tumblerfuls each day. All cases were found to be enteric by Widal's reaction, and all were removed to the isolation hospital. No deaths occurred. No return cases occurred in any of the houses after the patients returned from the hospital.

As the result of communications with the Local Government Board offers of assistance were made with respect to the examination of the fæces and urine of suspected carrier cases. Samples of fæces and urine of the persons at M's dairy farm, where the suspected source of infection arose in 1909 and 1910, were forwarded to Dr. J. C. G. Ledingham at the Lister Institute, who is carrying out bacteriological examination of materials on behalf of the Local Government Board, and to the present date after considerable difficulty five specimens of fæces and urine have been examined from different persons at M's dairy farm. All samples were reported negative except F's, the cowman, whose fæces and urine were examined in June and July, 1910, and found to be positive. It should be remembered that F's urine was examined in 1909 and was declared to be negative. A sample of F's saliva was examined and found to be negative. Thus F must be looked upon by the circumstantial and bacteriological evidence as a carrier case, and the whole of these series of 58 cases or the frequent outbreaks of enteric fever occurring in this area from 1899 to 1910 were due primarily to F.

In all the outbreaks of enteric fever the usual precautions were taken. Cases were removed at once to isolation hospital and premises disinfected. Notices were issued to each house asking occupiers to boil all milk and water used for drinking from wells. Chemical and bacteriological examinations were made of water supplied from water companies, and water was found to be good. Sewers were flushed twice a week with water and chloride of lime. House-to-house inspections were made. Sanitary defects were remedied. Inquiry was made as to possible carrier case or cases. The sanitary authority was most willing to carry out any suggestions with regard to improvement of the sanitation of the district and prevent the recurrence of the illness.

That the surface water and shallow well water in the district was polluted with fæcal matter there was not the slightest doubt, because several chemical and bacteriological examinations were made, and all showed that the water was polluted. The milk was the suspected source of infection in all the outbreaks, because all the primary cases obtained their supply from the same source. The period of incubation of the illness appeared to be short. The outbreak was sudden and as soon as the milk-supply was stopped the illness ceased. The illness was not of a severe type. Those in the families who drank raw milk in any quantities were generally the only members of the family to be affected. The source of infection in the milk appeared to arise from use of polluted water for washing churns or from water accidentally coming in contact with the milk.

It must be remembered, too, that in milk-borne epidemics the period of incubation in enteric fever is not easily defined. Some cases have symptoms almost immediately, while others go without symptoms for three weeks or longer. It has been noticed that when concentrated amounts of infection have been ingested, as in milk outbreaks of enteric fever, the period of incubation is short and prodromal symptoms disappear or are absent. In many of the cases of enteric fever mentioned the patients did not come under treatment until the second or third week of the illness.

It is now recognised that persons may carry the typhoid bacillus about for years without clinical evidence of any illness. Such persons may infect others and finally infect themselves. Davies and Hall report a carrier case in THE LANCET of Nov. 28th, 1908 (p. 1585). This case caused three outbreaks of enteric fever in three successive years, and the patient also finally had herself an attack which was considered to be enteric. If this diagnosis was correct it means that this female had a period of incubation of three years—that is, that typhoid bacilli were contained in her intestinal tract for a period of three years before she herself showed signs of illness.

The difficulty of investigating outbreaks of enteric fever, especially those epidemics likely to be due to carrier cases, are added to by the necessity for proving the case by repeated bacteriological examinations. The urine, fæces, and other discharges of persons within range of possible infection must be frequently examined. Should a single examination prove negative one must not be satisfied, but probably six examinations must be carried out before an opinion can be expressed. The difficulty of obtaining the sanction of the person to these examinations is usually great and the expense must be considered. When after several examinations the result is positive, what is one to do with the carrier case? Is he or she to be notified as suffering from an infectious illness? In my opinion, yes; the case should be notified and precautions and treatment adopted to render free from infection the fæces and urine, and the case should from a sanitary point of view be treated as an ordinary case of enteric fever.

Flies do not play much part in the dissemination or spread of infection of typhoid fever in well-sewered towns, but they may carry infection to a greater extent in rural districts, where privies, pail-closets, and dung-heaps are everywhere present. These chances of infection should be remembered and by a proper control of the flies' breeding-places their access to food and infectious matter should be prevented.

In all outbreaks of enteric fever in the future carrier cases must be searched for.

In controlling an outbreak of enteric fever all possible means should be taken so that a correct diagnosis of the illness should be made. Widal's test should always support the clinical diagnosis before notification, and sanitary authorities should provide the means for such diagnosis. Widal's reaction test is fairly accurate in about 97 per cent. of tests applied. It is more determinate after the first week. Blood culture is said to be accurate in about 90 per cent. of cases in the first week. Bacterial examinations of stools and urine should be the routine practice adopted in all isolation hospitals, and until the urine and fæces are free from infection patients should not be allowed to leave the hospital or the house except under proper precautions. A course of hemitol or urotropin should be the general rule adopted for all patients who have suffered from enteric fever.

F, the cowman, has been treated with 5 grains of urotropin three times a day for ten days and a bacterial examination has been made with the result, it is reported, that no typhoid bacilli were found in the urine but many colonies in the fæces.

It must be remembered that the typhoid bacillus multiplies rapidly in milk and resists the commencement of acid formation, but the growth of this bacillus is checked with advancing acidity. The bacillus is not killed by the process of churning, it may live in butter at least for ten days; hence milk, cream, buttermilk, and fresh cheese may carry the bacillus.

From what I have stated one can assume that F, the cowman, who suffered from enteric fever six years previously and who acted as cowman in the several dairy stalls, from which dairies the milk appeared to carry the specific cause of enteric fever, was the means of spreading the infection of enteric fever; or, in other words, F was a carrier case of enteric fever. How did the milk-supply become infected? Probably F, in spite of his assertions that he did not use the privies or water-closets at the places where he was employed, did use these places, and that through these defective closets and drains the water-supplies and the wells became infected. It will be noticed that in every place where F was employed the closets and drains were found to be defective and the water-supply polluted. Again, F might have defæcated in the cowsheds or fields and cows might have lain in the infected stools, or F's hands might have been infected with the matter. The saliva from F's mouth might have become mixed with the milk at milking time. F had facial paralysis from infancy and had no control over his flow of saliva.

Further investigations are being made, with the assistance of the Local Government Board, into the bacteriology of the excreta and urine of other suspected carrier cases, but the results are not as yet to hand.

Lewes.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.—At a meeting of the house committee held on Sept. 1st the chairman, Sir George Hare Philipson, announced that His Majesty King George V. has been graciously pleased to become the patron of the Royal Victoria Infirmary in succession to His late Majesty King Edward VII.

VESICO-VAGINAL FISTULÆ: A SUMMARY OF 21 CASES OPERATED ON.[1]

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RECOGNISING that in Western countries, with their superabundance of medical and surgical skill, the occurrence of vesico-vaginal fistulæ is comparatively rare, and in looking into the records of the last ten years in the various journals and periodicals, finding but few references to the condition, I ventured to think that a few notes of a series of 21 cases on which I operated while in charge of the 15 hospitals of the London Missionary Society in Travancore, South India, might be interesting.

I will first of all take an introductory survey of the subject as a whole, and thus divide my paper into the following divisions: (1) introductory survey; (2) *résumé* of cases; (3) cases of special interest; and (4) technique of treatment adopted throughout.

1. *Introductory survey.*—The cause of these abnormal communications between bladder and vagina in 19 cases out of 20, according to Herman, is by sloughing, the result of prolonged pressure of the fœtal head on the vesico-vaginal septum, and hence by the too long delayed (or non-) application of forceps. This fact was insisted on by W. T. Schmidt as far back as 1828, in spite of which there is a tendency by some to attribute the damage to forceps. And so in a country like India, when delay in labour is often attributed to the influence of an evil spirit holding the fœtus back, such pressure is frequent, and worse still incredible maltreatment adds to the trouble. On several occasions I have known of handfuls of cow-dung being introduced into the vagina in a protracted labour, perhaps after a week of agony, in the hope that the effect of the dung of the sacred cow would expel the evil spirit within, and on three such occasions it has been my lot to extract by handfuls the maggots which the contents of the unemptied uterus had become converted into.

Previous to the Christian era and for nearly 1600 years afterwards no clear references are found to this distressing condition, and already in Western lands the references and works on the subject are becoming less, while to-day with Western science getting to work in the East there remains much to be done.

It was in the latter half of the sixteenth century that descriptions of the conditions began to appear (Kelly). Luiz de Mercado, a Spanish physician, Felix Plater of Basle, and Severin Pineau of Chartres all wrote on it about this time. Plater says: "As a sequence of a difficult first labour, a young country girl had the opening of the bladder rent to such a degree that there was a long gaping furrow in its place, and the open bladder could be seen. I have twice inspected it myself, and discovered that it was so by using a probe. On account of this injury there is a constant involuntary discharge of urine, and the surrounding parts become excoriated and inflamed."

In 1675 and in 1684 we find the first records of successful operation for the closure of the fistulæ by Fatio, who placed his patients in the lithotomy position and exposed the fistulæ with a speculum; he then freshened its margins with a delicate pair of scissors, and brought the edges together by passing a sharpened quill through them and winding a thread over the ends of the quill to keep it from coming out. Both cases recovered. Lallemand, Gosset, Jobert de Lamballe, and many other surgeons worked at the subject, but with what measure of success may be judged by the words of Velpeau, who, writing in 1839, says: "To abrade the borders of an opening, when we do not know where to grip them; to shut it up by means of needle or thread, when we have no point apparently to secure them; to act upon a moveable partition between two cavities, hidden from our sight, and upon which we can scarcely find any purchase, seems to be calculated to have no other result than to cause unnecessary suffering to the patient."

[1] Read as a communication before the Southport Medical Society, Feb. 23rd, 1910.

We owe nearly everything in the work of dealing with vesico-vaginal fistulæ to J. Marion Sims, who, in 1852, made three things clear in his paper in the *American Journal of Medical Sciences*[2]: (1) the use of his speculum for exposure of parts concerned; (2) the funnel-like denuding of the edges of the fistulæ down to, but not involving vesical mucous membranes; and (3) suturing by non-irritating silver wire. This latter surely as near an approach to aseptic suture as the age permitted! Since his day Simon and Emmet evolved methods of dealing with large fistulæ, and the former in 1855 introduced colpocleisis or closing of the vagina for dealing with large fistulæ otherwise untreatable, and four such are recorded in the series below.

Walcher introduced the flap method called by the French "*auto-plastic par dédoublement*," in which he split the vaginal wall from the vesical and turned the bladder edges into the bladder, and the vaginal edges into the vagina. Walcher preceded his operation by removing a thin collar, but Winckel in an important paper published in 1891 showed this to be unnecessary. This flap method as modified by Winckel is the operation referred to in the subsequent series as used in four cases.

In the last 20 years routes and methods have multiplied fast and the names of L. von Dittel, Mackenrodt, Freund, Dudley, Trendelenburg, Kelly, and many others are prominent in the literature of the subject. In the Gynæcological Transactions of 1906 (p. 225 *et seq.*) Kelly wrote an exhaustive paper in support of the suprapubic route first introduced by Trendelenburg in 1881, a method especially useful when the vagina is contracted with cicatrices as is so often the case. He quotes 13 different routes associated with different operators' names, and more than double that number of methods.

In India the lot of women suffering from this trouble is, if possible, worse than that of their fellow sufferers in Western lands. For there they are often cast out of their homes as possessed of some evil power; true it is that as they enter the out-patient clinique of our hospitals they are possessed of an evil odour which tells you that one such is amongst the day's crowd as soon as it assembles, and our students would not infrequently come in from the waiting-room informing us of the presence of a vesico-vaginal case. Not a few of these hold their urine for a few hours while in the erect position, though it will leak immediately they assume the horizontal, a fact mentioned by Reed of Cincinnati in his "Text-book of Gynæcology," and due to the high position of the fistulæ enabling the bladder to fill up to the level of the opening in the vertical position.

2. *Résumé of 21 consecutive cases.*—The accompanying table presents the series in tabular form under certain heads.

(*a*) *The ages* range from 16 to 35 and give an average of 25. Two factors must be borne in mind in connexion with the ages—one, that several of the cases came two, three, or four years after the confinement; and a second, that the high-caste strict purdah women of India, where marriage and child-birth are much earlier than in the general class of our hospital patients, only form 3 out of the 21 cases. Otherwise the age incidence would be much lower.

(*b*) *Number of confinement.*—As the cause is protracted labour naturally the fistulæ usually occur at the first confinemen. In the series two occurred at the fourth labour and two at the third. The remainder of those noted were at the first confinement.

(*c*) *Days in labour.*—This brings out a point of some interest as showing how cases are allowed to drag on in that country: one for eight days, one for five days, six for four days, and six for three days, and one for two days—an average of 3·8 days.

(*d*) *Nature of delivery.*—In many of these cases coming months or years after delivery the method thereof is unknown. However, it may be accepted that no strictly instrumental interference was adopted, as such would have been in hospital, and hence recorded. The native midwives, however vigorous with their hands or filthy applications, know of no instrumental aid to hasten matters. Ten of the cases were delivered by forceps and one by craniotomy. It may be well to state that no cases were brought to hospital for delivery until every known resort of the native midwife had been practised, and delay usually prolonged until the sufferer seemed at death's door. Then in the friends' anxiety

[2] Vol. xxiii., 1852, p. 59.

to save the child's life the mother was brought in, hence the forceps were not so likely to be the prime factor in the causation of the fistulæ as the prolonged pressure. The causes of delay in the forceps cases we saw in hospital were chiefly three: jammed right occipito-posterior, flat pelves, and a form of Nägele's pelvis, due, in my opinion, to the fact that nearly all the girls as soon as they could lift a pot had to carry water from the village well twice daily with the full and heavy pot resting on the right hip in a way that disturbed the whole pelvis at the period of its active development.

(*e*) *Days after delivery when urine leaked.*—The average of the 15 cases where this was ascertained is 5·3 days, though one case ran up to 15 days and another to 12, while three commenced to leak at once. The bulk of the cases began to leak just at the time that the pressed and injured septum is supposed to require to slough away—viz., three to four days.

(*j*) *The operation.*—In 12 cases the ordinary Sims's operation of removing a collar of tissue around the opening and stitching with silver wire was performed; in 4 the flap method above referred to. Four others were dealt with by complete closure of the vagina or colpocleisis, though with the experience I have since gained I should now attempt them by the suprapubic route and open up the cicatricially contracted vagina. In one case I did the operation, described by Kelly in his "Operative Gynæcology," of bringing the posterior wall of the bladder down and stitching it into the gap.

3. *Cases of special interest.*—Case 6 was combined with a recto-vaginal fistula, and the vaginal outlet would not admit one finger owing to cicatricial contraction. Per rectum, however, two fingers passed easily through, and the opening into the bladder seemed much wider still. The recto-vaginal fistula was first closed, and then a colpocleisis done. For ten days all went well, and then she complained of diarrhœa,

Table giving a Series of Twenty-one Consecutive Cases of Vesico-Vaginal Fistulæ.

No. in series.	Age.	Number of confinement.	Days in labour.	Nature of delivery.	Days after labour urine leaked.	Time after labour operation performed.	Size of the fistulæ.	Result.	Operation.
1	22	3	3	Forceps.	8	8 months.	Admits middle finger.	Incomplete closure.	Paring.
2	22	1	5	,,	2	4 ,,	Tip of little finger.	,, ,,	,,
3	35	4	2	,,	Unknown.	3 ,,	3 fingers can enter bladder.	Complete closure.	Flap.
4	35	4	4	,,	At once.	2 years.	2 fingers can enter bladder.	,, ,,	,,
5	25	1	3	Craniotomy.	Unknown.	2 ,,	Tip of index finger.	,, ,,	Paring.
6	19	1	4	Forceps.	,,	3 ,,	Admits 4 fingers.	,, ,,	Colpocleisis.
7	27	Unknown.	4	,,	,,	3 ,,	Tip of index finger.	,, ,,	Paring.
8	25	,,	3	Unknown.	15	43 days.	Admits 2 fingers.	Incomplete closure.	,,
9	22	2	8	,,	7	4 years.	,, ,,	Complete closure.	Flap.
10	20	Unknown.	3	Forceps.	3	3 months.	Greatly contracted vagina.	,, ,,	Colpocleisis.
11	25	1	4	Unknown.	4	1½ ,,	Greater part of anterior vaginal wall.	Incomplete closure.	Posterior wall of bladder brought down and stitched in.
12	20	1	Unknown.	Forceps.	At once.	1 year.	Size of a pea.	Complete closure.	Paring.
13	23	Unknown.	,,	Unknown.	3	5 months.	Just admits a probe.	Incomplete closure.	,,
14	18	1	3	,,	3	4 ,,	Tip of little finger.	,, ,,	,,
15	35	1	4	Forceps.	5	10 years.	Admits three fingers.	Complete closure.	,,
16	18	1	4	,,	Unknown.	9 months.	Admits 2 fingers.	Patient ran away.	,,
17	22	Unknown.	Unknown.	Native midwife.	9	11 ,,	Vagina only admits little finger.	Complete closure.	Colpocleisis.
18	28	,,	3	Forceps.	6	3 ,,	2 small fistulæ.	,, ,,	Paring.
19	16	1	Unknown.	,,	At once.	4 ,,	No note.	Ran away.	,,
20	30	1	3	Unknown.	12	1 year.	Admits 2 fingers.	Incomplete closure.	Flap.
21	35	3	Unknown.	Native midwife.	Unknown.	2 years.	Vagina only admits probe.	Complete closure.	Colpocleisis.

(*f*) *Time after labour operation performed.*—It was, of course, very seldom that we could choose the period for operating. When life became unendurable usually they came, and not infrequently because they had been turned out of their homes as possessed of evil spirits! Hence the figures under this head are of more interest than value. The shortest period was 43 days, and the longest 10 years after the confinement.

(*g*) *Size of the fistulæ.*—One was too small to admit a female lass catheter, and only just allowed a probe to pass, while the largest was a great gap, involving the whole of the anterior vaginal wall from the anterior fornix down to the level of the urethra. This case is referred to in detail later. It was not the size so much as the condition of the fistulæ that qualified the success of the closure, a small opening with fibrous edges and environment being much less likely to close than a much larger one with softer surroundings.

(*h*) *Results of operation.*—These are the results of a single operation only, and of the incomplete closures the 2 who were operated on a second time (1 closing and 1 not) are not counted in the series twice over. Twelve went away with no leak; 7 leaked, but showed a much smaller fistula than before operation; and 2 ran away before the stitches were removed. This gives a 63 per cent. of complete closures with one operation; mortality *nil*.

and examination per rectum showed a small fistula persisting, which, of course, must have been in communication with the bladder. Six months later she reported that she kept quite dry, but often had diarrhœa. In Case 7 examination showed that there was no perineum at all, the rectum and vagina being one cloaca, and yet, in spite of this, she made no complaint of diarrhœa or incontinence of fæces! Case 8 gave a most interesting history; the following is an exact copy of my Indian student's note: "The patient says that 43 days ago she gave birth to a child. The labour pains lasted for three days, and on the third day they noticed first the presenting of the right hand of the child, then the right leg, and last of all the head was extracted by the native midwife, who found the child to be dead. The patient was quite conscious of the processes of the labour even up to its finish." Case 11 was the case in which the gap was so large that I had to adopt Kelly's plan and dissect up between uterus and bladder so as to free enough posterior bladder wall to bring down and stitch to the lower edge of the opening so that the upper part of the anterior vaginal wall had no vaginal covering at all, but was simply the bladder wall alone. To protect the ureters in this manipulation flexible ureteral catheters were passed, and when the operation was concluded their ends were left protruding through the urethra alongside

a glass catheter tied in to drain off any possible bladder hæmorrhage. For three days the temperature was between 99° and 100° F., and there were considerable general distress and pain with vomiting and definite pain in the region of the kidneys though urine trickled nicely through the ureteral catheters. Fourteen days after operation she went home leaking from a small fistula at the site of union of bladder wall and vaginal edge. Case 15, who was operated on ten years after the leak began, is interesting inasmuch as she had two children after it, and when she came for treatment one was nine years old and well, the second had been born dead. Case 21 showed such an amount of cicatricial contraction of the outlet of the vagina that only a probe would pass through—telling a tale of woeful maltreatment—admittedly at the hands of a native midwife. Colpocleisis was very simple.

4. *Technique of treatment adopted throughout.*—On entering the hospital we gave these patients at least four or five days' alum douching morning and evening, and attended to their general condition. To postpone the operation longer would have lost the patients, because if not dealt with at once many of that class of patient simply ran away from hospital, so not infrequently one operated before excoriations, &c., were healed up. The night before the operation, scrubbing, shaving, and a douche of biniodide of mercury 1 in 2000 and the usual purgation formed the preliminary preparation. In the morning an ordinary soap-and-water or sometimes a turpentine enema was given to ensure clearance of the bowels. Chloroform was administered and the lithotomy position adopted. Scrubbing followed by spirit and then biniodide of mercury, and finishing with a douche of the last, formed the prelude to the operation. Two assistants manipulated four specula, anterior, posterior, and one on either side, and any cicatricial contraction of the vaginal orifice was freely incised, as clear exposure was half the battle. A fairly lax vaginal wall permitted almost any method with good assurance of an easy operation and ultimate success, but cicatricial tissue anywhere about the fistulæ usually made a difficult operation and more speculation as to the issue. I learnt to prefer any size of an opening in lax tissue to the merest crack in fibrous scar tissue. A glass catheter was then introduced into the urethra, or rather an attempt was made to introduce it, for in quite half the cases the urethra was either closed up, or nearly so, and had to be negotiated with a probe and dilated, and sometimes viâ the fistula and from within outwards. If now there was any difficulty in tracking the exact site of a small or tortuous fistula a boric injection through the catheter into the bladder would trickle through the opening and reveal it. It was surprising how difficult some tiny things were to get at, high up in the anterior fornix with a densely cicatricial and fixed cervix behind, and hard fibrous bands in front that precluded any possibility of pulling things down at all. The next step was to plan the best line of suture, a straight, transverse, or vertical, or any variety of curve was preferable to angled lines or T-shaped unions, because at the junction of two lines of suture a leak was most likely to occur. When possible the "paring" method of Sims was adopted. A collar of tissue around the opening was clean cut away, as far as possible to leave a funnel-shaped orifice, wide to the vagina, narrow to the bladder, a most "tricky" thing, and the great difficulty of one's early operations, and yet good union evidently much depended on this bevelling of the rawed edges. The orthodox fistula knives never gave me the same facility of manipulation that the use of Emmet's little sharp-pointed scissors with long handles did, the left hand seizing the margin to be cut away with a long, fine, fixation forceps. If the whole circumference was not cut round clean, great care was needed to be sure that little angles did not escape rawing; and if the neighbouring tissue was not sufficiently lax to allow of easy approximation of the edges made wider by the paring some other method had better be considered, or Valpeau's words of 1839 would be applicable (*vide supra*). A hot douche or the pressure of a swab on a holder arrested bleeding sufficiently to give clear view for the suturing. Sims's original silver wire I learnt to like best, though more difficult to insert and most difficult to remove without damage to the line of union. But the firm support it gave to the parts and its lesser liability to cut or eat out made one feel happier about a case when it was used. A fairly stout but soft wire seemed best, and to introduce it a double silk was passed on a handled needle and the wire bent sharp over the loop of the silk and drawn through. The needle point was made to enter the vaginal mucous membrane and to come out at the bottom of the funnel-shaped opening just short of the bladder mucous membrane, cross the gap, and reverse the route on the other side, emerging on vaginal mucous membrane opposite the entrance. Any number from two to five of such sutures might be required, and all should be passed before any are tightened. The tightening is best effected by seizing each end of the wire with a Greig-Smith, or strong Spencer Wells forceps, and giving a single twist, gripping the forceps in such a way as to make the wire brace up the rawed edges in a firm and good union, carefully avoiding the great tendency to a twisting action. The wires are best left 2 or 3 inches long to facilitate removal and hold the part steady, which latter result was helped by threading the long ends through a rubber tube and gently stuffing this round with iodoform gauzes.

The "flap" method, or more correctly called "dédoublement," and associated with the name of Walcher, is good where there is not enough tissue to freshen the edges satisfactorily. In this manœuvre the vaginal wall is split off the vesical wall all round the gap; the vesical portion is then tucked inwards to the bladder and sutured by a buried silk or catgut, avoiding needling the actual mucous membrane because of the liability of it to bleed into the bladder; then the vaginal portion is everted and sutured as in the "paring" method. The rawed areas approximated are extensive, and it seems reasonable to look for a more solid union in such a method. The splitting of the layers needs rather more delicate manipulation than paring, and then there is the double stitching requisite, factors which prolong an operation always tedious at the best.

Finally, we douched the vagina, and then always injected the bladder viâ the catheter with boiled boric acid solution to test the closure, and occasionally a slight leak when the bladder was well distended would show where another small silkworm gut suture might prevent a failure. A long rubber tube was attached to the catheter, which was tied in, the sight of the steady drip from which into a vessel filling with urine was one of the pleasures of the next morning's round of the ward.

After-treatment.—The only pain felt afterwards was in the back from the prolonged lithotomy position, and sometimes it was severe enough to need a little morphia. A neighbouring surgeon used to place the patient in the genu-pectoral position for the operation to avoid this pain. The catheter was left in for four or five days; and the gauze plug around the tube holding the long ends of the wire sutures was carefully removed, a vaginal douche given of 1 in 3000 biniodide, and the gauze repacked daily. It has lately been urged that no tying in of the catheter is needed, but there is a sense of security in so doing that one is loth to forego. The removal of the sutures after 14 days is a big question where wire has been used; the nipping is easy, the unbending is difficult, and it seemed best to secure the cut ends of the wire in strong Spencer Wells forceps, the great risk, of course, being the opening of the wound, by the pulling on the sutures. The withdrawal of the partially unbent wire is equally difficult, and three of my incomplete closures were due to opening the wound with the removal of one of the wires. Two days after the stitches were out we allowed the patient to go home, and in India one could but feel that she not only went out a successful case but she went to be received back into the home from which she had been thrust forth as "unclean."

Bibliography.—Emmet: Vesico-vaginal Fistulæ, &c., New York, 1868. Fatio: Wehe-Mutter, Basle, 1752, p. 284. Hart and Barbour: Manual of Gynæcology. Herman: Clifford Allbutt and Playfair's Gynæcology, 1896, pp. 17, 436. Jobert: Vesico-Vaginal Fistulæ and their Treatment, Gazette Médicale de Paris, 1836, p. 193; ibid., 1836, vol. iv., p. 225; ibid., 1849, vol. ii., p. 409. Kelly: Johns Hopkins Hospital Bulletin, February, 1896; Gynæcological Transactions, 1906, p. 225, et seq.; Operative Gynæcology, vol. i., p. 348 et seq. Lallemand: Reflections on the Treatment of Vesico-Vaginal Fistulæ, Archives Générales de Médecine, April, 1825, vol. vii., p. 483. Mackenrodt: Centralblatt für Gynäkologie, 1894, No. 8. Petit: Treatise on Surgical Diseases, Paris, 1790, vol. iii., p. 87. Pineau: Opusc. Physiol. Anat., &c., Paris, 1598. Plater: I. Spach. Gynæc., &c., Argent, 1597. Pozzi: Treatise on Gynæcology, vol. iii., p. 241, et seq. Rochard: History of French Surgery in the Nineteenth Century, Paris, 1875, pp. 387-394 and 839-843. Sims: Treatment of Vesico-Vaginal Fistulæ, American Journal of Medical Sciences, 1852, vol. xxiii., p. 59. Simon: Ueber die Heilung der Blasenscheidenfisteln Grissen, 1854. Simpson: Clinical Lectures on Diseases of Women, Philadelphia, 1863, pp. 21-40. Von Dittel: Abdom. Blasenscheident Fisteln, Operation, Wiener Medicinische Wochenschrift, 1893, No. 25. Walcher: Die Auslösung der Narben als Methode der Plastik, Centralblatt für Gynäkologie, 1889, No. 1, p. 1. Webster: Text-book of Diseases of Women.

Southport.

ON THE FAILURE OF NERVE ANASTOMOSIS IN INFANTILE PALSY.

BY DR. A. STOFFEL,

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UNDER the above title,[1] Dr. W. B. Warrington and Mr. R. W. Murray published their experience of nerve anastomosis in cases of infantile paralysis, an experience which was entirely of an unfavourable nature. There is a danger that their article may prejudice the minds of the English profession against the operation of neuroplasty, which is still in its infancy, but worthy and capable of being expanded. There is also good ground for assuming that their failures must be attributed, not to any fault in the idea or method, but to defects in their plan of operation and to a technique which is not free from objection. I therefore venture to oppose the opinion expressed by these two writers, and feel that my studies in this branch of surgery and the practical experience I have gained in dealing with the large paralytic material in Professor Vulpius's clinic entitle me to do so.

In three of their cases an anastomosis was made between the external and internal popliteal nerves for paralysis of muscles supplied by anterior tibial nerve. [Case 3: "The extensors of the feet remained, however, absolutely powerless." Case 4: "The extensors of the right foot alone were paralysed." Case 5: "The injury had damaged the external popliteal fibres, ... especially those making up the anterior tibial nerve."] Now, in two of these cases the external popliteal (peroneus) nerve was divided and implanted into a slit in the internal popliteal (tibialis), and in the other a flap was raised from the internal popliteal and grafted end-to-end with the divided external popliteal. To such a procedure I have the following objections. As the object of the transplantation was only to innervate the fibres of the anterior tibial nerve it was not necessary to divide the whole of the external popliteal and graft it into the internal popliteal. It would have been sufficient to graft only the bundle destined for the anterior tibial nerve, as I have proved that the external popliteal nerve can be split without difficulty into its two component parts, anterior tibial and musculo-cutaneous, as far up as the popliteal space and lower third of the thigh. This subdivision of the nerve has hitherto been described only in the leg. The anterior tibial part lies close to the tendon of the biceps, while the musculo-cutaneous portion looks towards the popliteal space. Had this fact been known to Warrington and Murray they would not have sacrificed the musculo-cutaneous nerve—e.g., in Case 4, where the muscles it supplied were healthy—a point of great importance for the success of the operation. They would have brought only the fibres of the anterior tibial nerve into contact with the incised internal popliteal, which would involve a much smaller transverse section of nerve. The whole of the external popliteal nerve is too thick to be innervated from a comparatively small slit in the internal popliteal.

A second very important point has been overlooked. Just as the external popliteal nerve can be separated into its two great component nerves, so the fibres of each of these can be further subdivided, so as to determine accurately the course of the fibres for the tibialis anticus, extensor longus, digitorum, &c.; or, in the case of the musculo-cutaneous, of the motor and sensory fibres. In the same way we can determine in the internal popliteal the tracts for the calf muscles, the extensors of the toes, &c.

In the cross section of a nerve the fibres for the different muscles have a fixed position, therefore we may speak of the topography of the cross section of the nerve. What I have just said about the popliteal nerve holds good for all the nerves in the body.

I have worked out this idea of mine in an article[2] in which I have described the internal anatomy of the nerve trunks of the upper and lower extremities. Warrington and Murray grafted the divided external popliteal into the internal popliteal, or raised a flap from the latter and joined with the former. In what part of the internal popliteal nerve was the slit made? With which tract of the nerve was the paralysed external popliteal brought into contact? Which portions of the internal popliteal nerve were cut out? Was the slit made in a motor or sensory tract? Was it made into a healthy tract? [The internal popliteal was not absolutely intact in all cases.] Did the flap raised from the internal popliteal contain sensory or motor fibres, and, in the latter case, were they functionally active? These are all questions to which Warrington and Murray can give no answer. They contain considerations of the highest importance for the success of the operation, and to the neglect of these the failures must be ascribed.

A further factor which can be held responsible for Warrington and Murray's negative results is to be found in the technique of the implantation. If a longitudinal incision is made into a healthy nerve there is great risk of the knife failing to cut the actual nerve fibres; it may merely separate them and pass into endoneural connective tissue in the intervals between the nerve bundles. If a nerve is grafted into such a position, and comes into contact with connective tissue and not with freshened nerve fibres, failure is certain. To avoid this I make a transverse section with a fine sharp pair of scissors, and so make sure of having a sufficient freshened nerve surface to bring into contact with the paralysed nerve. To fix the two nerves with their cut surfaces in exact contact a longitudinal incision may be made at right angles to the small transverse incision. The same mistakes were made in Case 2 in grafting the fifth cervical nerve into a longitudinal incision in the sixth root in the brachial plexus. The same consideration ought to be paid to the relation of the elements in a transverse section of the sixth root, though I must admit that it is very difficult to determine one's exact position when so near the centre.

Nerve transplantation is a very difficult undertaking. If the procedure is so primitive as simple division of a nerve trunk or root and its insertion into another, success is not to be expected. The vital function of a nerve, a structure consisting of many individual elements, can only be restored by a highly developed procedure which takes account of all anatomical and physiological considerations down to the most minute detail. Let us hope that we shall soon possess it.

I have had to raise these objections to Warrington and Murray's article, for it would be a matter for regret were English surgeons to drop nerve transplantation as unsuitable for these cases because the hopes entertained in their first enthusiasm were not fulfilled. I am sure the operation will render good service when it has been fully developed, and when regard is paid to the anatomical arrangement of nerve bundles within nerve trunks. There have been successes in restoring the function of the deltoid in three cases of transplantation of the circumflex nerve for total palsy of the muscle lasting one, three, and five years. One child had been treated for a year by neurologists.[3] Yet I would utter a warning against the enthusiastic speculations rife in certain quarters, which are as erroneous as the declaration that the operation is bankrupt. I do not believe that nerve transplantation will in the future entirely oust the operation of tendon transplantation which has given such excellent results.

[1] THE LANCET, April 2nd, 1910, p. 912.

[2] Deutsche Zeitschrift für Orthopädische Chirurgie, Band XXV.

A CASE OF CHRONIC CONSTIPATION TREATED BY FARADISM OF THE LARGE INTESTINE.

BY W. J. BURROUGHS, M.R.C.S. ENG., L.R.C.P. LOND.

IN times both past and present, much thought and no little ingenuity have been brought to bear on the subject of chronic constipation, but I have the temerity to think that the treatment I am about to briefly describe will hold its own with the best. Latterly, electrotherapy appears to have given excellent results in such cases and doubtless has a distinct advantage over drugs or non-electrical stimuli. With drugs there is the question of elimination, and with ordinary mechanical stimulation that of obtaining a recovery of a lasting nature. Excellent results are claimed for the static wave current and rectal electrode or faradism with rectal electrode and roller electrode over the large bowel, but

[3] Loc. cit.

one cannot help thinking that from the point of view of both operator and patient the elimination of the rectal electrode is desirable if equally good results can be obtained without it. That this can be done I am sure, as I have treated a considerable number of cases without such an instrument and with the most gratifying results. In all cases, however, the restoration of the musculature of the large intestine has been the fundamental object in view. Apart from its functions of secretion and absorption, the greater enteron being essentially a muscular viscus, it is probable that, once the atonic muscular coats have recovered, a fair chance is offered to the mucosa to follow suit. For if the cæcum can be got to expel its residual contents satisfactorily, which it does not usually do in this affection, the mucous coat will be relieved of its chief source of bacterial invasion or toxic production, and will so far be able to cope with its pathogenic organisms as to render the introduction of the massol bacillus or the removal of the large intestine unnecessary expedients. This I venture to say as there seems no reason to doubt that, once the autotoxæmic condition of the patient is eliminated, his phagocytes will be in a sufficiently healthy state to perform their natural function as a defending force.

Have not most of us, if not all, met with individuals of both sexes, who have lived to a ripe old age, performing all their intestinal functions normally, and have never heard of the massol bacillus? If this be so, should not our efforts be directed rather to restoring the bowel to its natural state than to inducing what one might term a bacterial habit? For wherein is the man who daily partakes of his dose of benign bacteria better than he who has nightly recourse to purgatives? Is it not even a remote possibility that our defending legions, relying constantly upon reinforcements of these somewhat doubtful allies, may in time become even more indifferent to their duties and still further dependent upon this artificial aid? This may or may not be so much theory, but I venture to think there will be at least a few who will agree when I say that to effect the restoration of the large intestine is an infinitely better result than its temporary sterilisation, stimulation, or permanent extirpation. Amongst other advantages of the muscular recovery of the large bowel is the important one of rendering the appendix far less liable to become a seat of trouble: first, because of the decreased laxity of its valvular orifice; and secondly, on account of the increased purity of the gut.

In the method suggested for the restoration of this atonic and dilated viscus I lay no claim to originality, as I have merely adopted one which has been used on the continent with the utmost success; but beyond being employed in one or two large general hospitals it is so far practically new to this country. The treatment consists in the application to the large intestine of a faradic current of a high degree of penetration and capable of very exaggerated interruption. The method positively resolves itself into putting the abdominal and intestinal muscles through a variety of physical drill, by which they daily gain in strength and efficiency till their restoration is positively complete.

The circumstances which first led me to adopt the particular mode of treatment I am now about to describe were the following. About ten months previously I had been called to a lady who suffered from chronic constipation, and who on this particular occasion had not experienced an action of her bowels for nearly three weeks. On examination I found that she had a large mass of impacted fæcal material at the sigmoid flexure of the colon, the lower gut being perfectly empty. A high tube enema was administered with satisfactory result, and repeated on the following day to make sure that the intestine had been efficiently cleared. Although the operation as far as it went was satisfactory, she soon became entirely reliant on aperients once more. I consequently placed her on a vegetable diet and abdominal massage was daily resorted to, under which treatment she very greatly improved. But alas! she tired of the diet, and the massage, after having been persisted in for two months, was discontinued. But in spite of this for a time she remained better, and it was not till some weeks later that I found that she had relapsed to purgatives and was taking "Somebody's" patent pills regularly each night. It was, however, just at this time that I happened to make the discovery of the particular apparatus I now use, and having inquired carefully into the history and result in several cases treated therewith, decided, after making a thorough trial of the machine, that I would give the patient above mentioned the benefit of what experience I had in the matter. Having therefore obtained her consent to the adoption of such a course, a series of treatments, which ultimately led to a very satisfactory recovery, was initiated. When treated the patient was placed in a sitting position leaning slightly forward. Two flat leaden electrodes were adjusted next to the skin over about the middle of the ascending and descending colon respectively. A faradic current of about 9 volts, with an ampèrage adjusted to the requirements of the patient, was passed for 15 minutes and the current then reversed for another 15 minutes, at the end of which the first séance closed. The next morning there was an evacuation without an aperient. She had about 30 treatments at ever-increasing intervals until the evacuations became normal in consistency and frequence. I may say that I am continuing to have most satisfactory results, and these without the use of a rectal electrode.

Welbeck-street, W.

A CASE OF SO-CALLED CHRONIC NEURASTHENIA DUE TO ABDOMINAL ADHESIONS; OPERATION; RECOVERY.

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THE following case presents so many interesting points that we consider it worth publishing.

The patient was a man, aged 41 years. When nine years of age he had had an attack of what at the time was called "low fever." (This was probably typhoid fever, as another inmate of the house subsequently got typhoid fever and died.) The symptoms practically date from this time. For many years past he has been subject to occasional attacks of abdominal pain, so severe at times as to "double him up." The pain generally passed off on getting rid of flatulence. At about 17 years of age he was much troubled with dyspepsia and constipation and a dragging pain in the back. Five years later the patient had his first attack of severe abdominal pain. Whilst taking a cold shower bath he was seized with acute abdominal pain, which necessitated his being lifted out of the bath and put to bed. The pain gradually passed off, and in a few days' time he was able to get about again. No vomiting or pyrexia was present. The patient at the time was much troubled with flatulence. There was no constipation. An east wind or cold weather generally used to predispose to an attack, or any sudden movement—i.e., sneezing, coughing, or sudden shock, like a cold bath. The patient consulted at different times a considerable number of medical men, and the general opinion was that he was suffering from neurasthenia. Purgatives very often brought on an attack. These attacks continued off and on at irregular intervals until February, 1908, when he had his most severe attack. The patient was taking a warm bath when, by mistake, the cold water was suddenly turned on. He was immediately seized with intense abdominal pain and marked rigidity of the abdominal muscles. The pain was situated on the left iliac fossa, radiating to the back, and it lasted for about one and a half hours, but was relieved by antispasmodics advised by Mr. John Pardoe, who saw him during the attack. The following are Mr. Pardoe's remarks describing the attack:—

I saw him about 9.30 in the morning. The attack had then lasted about one hour. Patient was lying flat on his back in bed, perspiring about hands and forehead (not body). Pulse 78, soft and regular. Face calm (until the spasm to be described occurred). Tongue clean and moist. Temperature 97·6° F. Whilst I was talking to him and looking at his abdomen, which was absolutely rigid, respiration being diaphragmatic in character, a ripple of muscular contractions occurred from below upwards along the recti, which were standing out markedly.

It was exactly like peristalsis. The abdominal muscles then were drawn in until it looked as though you could not lay a sheet of paper between the anterior abdominal muscles and the spinal column. The whole thing shortly relaxed and the abdomen was normal again. This happened twice in the space of about ten minutes. During the spasm his face was screwed up and he sweated profusely on the forehead and scalp. Pulse was regular and not quickened. He had a good action of the bowels later in the day, and next day was apparently all right.

In October, 1908, the patient consulted Dr. Bridges, who, thinking the condition might be due to some auto-intoxication in the bowel, put him on sour milk, with the result that he did not have any attack during the following winter months.

On Jan. 31st, 1910, Dr. Bridges was called to see the patient, who was in another attack. On arrival the patient was sitting lying back in an arm chair, leaning towards the right side with his legs slightly flexed, resting on a cushion, quite afraid to move. The pulse was quiet and the temperature was normal. The patient complained of great pain and dragging on the left side of the abdomen, going through to the back. The administration of amyl nitrite relieved the spasm temporarily. After some time he was enabled to get to bed with the aid of two sticks. But it was quite impossible to straighten his back or move his left leg with any freedom. After the attack Dr. Bridges, considering the length of time the patient had suffered, advised him to have the lower bowel thoroughly examined under an anæsthetic.

On Feb. 3rd Mr. Lockhart Mummery examined the patient under an anæsthetic with the sigmoidoscope, and the following are his notes written just after the examination:—

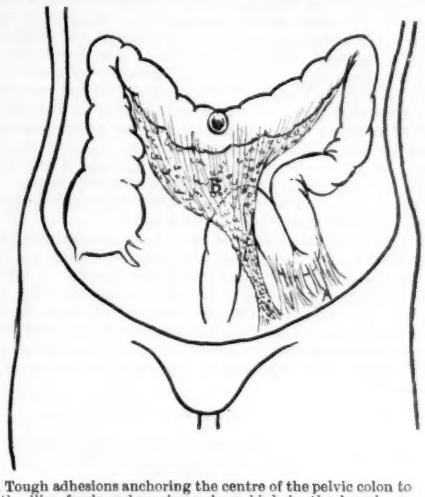
The rectum is normal. About 'one and a half inches above the recto-sigmoidal junction the bowel takes a sharp turn to the left at an acute angle and is fixed, apparently to the left iliac fossa. (The bowel here should be freely moveable.) This partial fixation of the bowel was confirmed by inflation and by the fact that it is impossible to introduce the instrument any further. Otherwise the bowel appeared to be normal, and nothing abnormal could be felt on bimanual or abdominal palpation. I am of opinion that the sigmoid flexure is kinked by adhesions, probably the result of some previous inflammation. It seems probable that the pain which the patient suffers from is due to severe entero-spasm in the bowel just above the fixed portion.

After a consultation with Mr. Pardoe and Dr. Bridges it was decided to perform laparotomy with the object of removing any adhesions and straightening the bowel.

On Feb. 10th Mr. Lockhart Mummery opened the abdomen on the left side through the rectus muscle. On opening the peritoneal cavity a long band of omentum some three inches in length was discovered, the extremity of which was attached to the middle of the left iliac fossa, passing across the sigmoid flexure. This band practically anchored the stomach and transverse colon to the left iliac fossa. Further investigation showed a number of very tough adhesions tying down the centre of the sigmoid flexure to the same spot in the iliac fossa. The spot to which the adhesions were attached in the iliac fossa was about the size of a shilling, and there were no other adhesions anywhere. These adhesions caused an acute double kink in the sigmoid flexure, and prevented this part of the bowel from rising out of the pelvis. All the adhesions were very tough and obviously of old standing. There were no signs of any inflammatory lesion or any thickening or disease of the bowel. Everything else in the abdominal cavity appeared to be quite normal. There was a short normal appendix. All the adhesions were cut through with scissors, and the sigmoid flexure freed until it could assume a normal position and the kinks had been got rid of. The resulting raw surface uncovered by peritoneum was then carefully closed in by suturing the peritoneum from side to side in such a way as to prevent any re-formation of a kink. When this was done the sigmoid could assume its normal position and no raw surface remained. Great care was taken to prevent bleeding during the operation, and to leave the peritoneal cavity quite free from blood clot. The abdomen was then closed in three layers. The superficial stitches were removed in six days, and the patient made an uneventful recovery. The illustration shows the condition found at the operation. Almost directly after the operation the patient stated that he felt more comfortable in the abdomen than he had been for some years, and that the old vague pains had quite subsided.

The case is one of particular interest owing to the abnormal symptoms and the very long time that they had existed. The acute attacks of abdominal pain appear to have been due to violent entero-spasm above the partial obstruction in the colon caused by the adhesions, and it is remarkable that there were very few other symptoms except of a vague nature. The origin of the adhesions is somewhat obscure, and the only explanation appears to lie in an attack of typhoid fever at the age of nine years, from which time the symptoms appear to have dated.

The case well illustrates the value of a careful sigmoidoscopic examination in such cases, as without it the diagnosis would have been impossible. It is a well-known fact that the mere division of the adhesions is not sufficient in these



A, Tough adhesions anchoring the centre of the pelvic colon to the iliac fascia and causing a sharp kink in the bowel. B, Omentum which on left side was drawn out into a narrow band and adherent to the iliac fossa across the pelvic colon.

cases, as there is a risk of their re-forming. We are of opinion that the best way of preventing this is to secure very careful hæmostasis during the operation, and to carefully cover in all raw surfaces by some form of plastic operation on the peritoneum. In addition to the above precaution, abdominal massage and exercises were used in the present case as soon as the condition of the abdominal wound allowed of this. Care was also taken to keep the bowels acting daily by means of enemata.

The patient was seen a few days ago by one of us, and he had put on a stone in weight since the operation, and now he feels better than he remembers ever to have felt before.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

AN OPERATION FOR PROLAPSE OF THE RECTUM.

BY LESLIE W. DRYLAND, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H.,
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THE patient, a female, aged 47 years, was admitted on Jan. 4th to Kettering General Hospital suffering from procidentia recti of six years' duration. The rectum prolapsed during each act of defæcation, the pain being excruciating. For the past year the prolapse would not return of itself, and the patient's medical attendant had frequently to be sent for to reduce it.

On examination the prolapse was found to be 6 inches long, but was easily returnable. There was undue relaxation of the anal parts, the perineum being flabby. A little straining was sufficient to cause the bowel to prolapse. The constant worry and pain made the patient fear defæcation, and she was the emblem of a neurasthenic.

On Jan. 8th the patient was placed on the operating table with the prolapse hanging down, and with the assistance of Mr. G. Watson Hill (house surgeon) the abdomen was

opened along the outer border of the left rectus abdominis muscle, the deep epigastric was pulled aside, and on opening the peritoneum a good view was obtained of the sigmoid and upper part of the rectum, and forcible traction on this quickly reduced the prolapse. An incision was now made in the peritoneum covering the iliacus muscle, parallel to and about an inch and a half above the external iliac vessels. A flap of this peritoneum was dissected downwards and firmly stitched to the upper and posterior portion of the rectum, firm traction being employed to bring this up out of the pelvis as high as possible. The upper flap of peritoneum was now brought over to the front of the bowel and was firmly secured by interrupted silk sutures; by these means nearly half the external covering of the bowel, which had been scratched previously to the insertion of the anterior layer of sutures, was brought into direct contact with the iliacus muscle. The abdomen was now closed in the usual way. The patient was kept in bed for six weeks, the bowels being kept open by an enema daily for the first month. The patient made a good recovery and there has been no further trouble since the operation 12 weeks ago.

My object in publishing this case is to obtain information as to whether this operation has been performed in other hospitals, and if so with what permanent results. I did not think the patient was in a fit state to undergo the usual operation recommended for this trouble. I might mention that a small multilocular ovarian cyst was found attached to the left tube and was removed during the operation, but I do not think that this was in any way the cause of the procidentia.

Kettering.

A CASE OF HENOCH'S PURPURA WITH INTUSSUSCEPTION.

BY JOHN H. TONKING, M.B. LOND.,
SURGEON TO THE REDRUTH HOSPITALS.

ON account of its rarity I thought the following case might be worth recording.

The patient was a boy, aged 5½ years, and was taken ill on June 2nd, 1910, with earache and vomiting with a slight rise in temperature. He remained in the same condition, complaining of earache and headache. The temperature on the 5th was 102° F.; on the 7th the temperature was 103°, pulse 120, and respirations 24. There was no sign of pneumonia. On the 8th œdema of the scrotum was observed. The temperature was normal and the pulse 96. On the 10th he could not move the right arm on account of pain in the joints; the hand was swollen. On the 12th œdema of the eyelids was noted. On the 13th and 14th purpuric spots on the buttocks were observed. The boy kept about the same until the 18th, when at 7 A.M. he complained of great abdominal pain; he vomited. On examination at 9 A.M. a swelling was detected above the umbilicus. Examination per anum revealed fæces in the rectum but no mucus or blood. An enema was followed by a normal action with no blood or mucus. I decided to send him to the Redruth Hospitals and perform laparotomy. The urine was normal. Dr. Frank Hichens agreed with me as to the diagnosis.

I opened the abdomen at 5 P.M. through the right rectus in the umbilical region. The tumour proved to be an enteric intussusception several inches in length. Reduction was easy. The apex of the intussusception looked like a piece of blood clot. The whole of the tumour was infiltrated with blood. The time occupied by the operation was 20 minutes. The abdomen was closed with through-and-through silkworm-gut sutures. The pulse before the operation was 80; afterwards it was 140. The pulse gradually came down to 96 on the sixth day. No temperature over 99·5° was recorded. The patient was given 4 ounces of water containing 5 grains of lactate of calcium every six hours per rectum and was given albumin water by the stomach, followed later by peptonised milk. On the day after the operation a simple enema was followed by a normal stool, with no blood.

This case is interesting as an example of the absence of one of the recognised signs of intussusception—blood and mucus per rectum. Although intussusception was complicated by a disease associated with hæmorrhage, there was not at any time the least blood per anum. My thanks are due to Sister Freeman for careful after-nursing.

Camborne, Cornwall.

A CASE OF AORTIC REGURGITATION IN AN INFANT.

BY W. ANSLEY-YOUNG, M.R.C.S. ENG., L.R.C.P. LOND.

SOME days ago a woman brought a male child, aged 18 months, into my surgery and told me she thought he was suffering from worms. I was much struck by the extreme pallor of the child, and questioning the mother on this point, elicited from her the fact that the baby had always been very pale, ever since birth. As a matter of routine, I placed my finger on the child's wrist and was much surprised to feel a typical Corrigan's pulse. Becoming interested, I had the child undressed, and, after a careful examination of the heart, I concluded that the child was suffering from well-marked aortic regurgitation. The physical signs were as follows: Marked universal pallor; pulsation in the vessels at the root of the neck; diffuse pulsation over an area corresponding to the fifth, sixth, and seventh spaces in the apical region, with a localised apex beat in the sixth space, half an inch outside the mid-clavicular line. Percussion showed enlargement of the left ventricle. The upper limit of the heart was normal and there was no dulness to the right of the sternum. On auscultation the first and second sounds were heard at the apex, and a diastolic murmur. Over the tricuspid area the sounds were normal but over the aortic and pulmonary areas no sounds were heard, these being replaced by a well-marked double or "to-and-fro" murmur, the diastolic bruit being well conducted down the left border of the sternum towards the apex.

The most interesting question in the case is the cause of the lesion. The mother, aged 28 years, gives a history of two attacks of rheumatism, the first having occurred six years ago and the second two and a half years ago. These attacks, however, seem to have had little or no effect upon the heart, for the sounds are quite clear and no enlargement can be detected on percussion. The only indication of any cardiac mischief is some accentuation of the pulmonary second sound. Did this child contract an endocarditis *in utero* as a result of the rheumatic virus in the mother, or is the case one of congenital morbus cordis, in which the aortic valves are malformed or deficient?

There is one other child in the family, a girl aged 5 years. I have carefully examined her heart but cannot find any abnormality.

Skewen, Glamorgan.

Reviews and Notices of Books.

A Text-book of Medical Jurisprudence and Toxicology. By JOHN GLAISTER, M.D. Glasg., D.P.H. Camb., F.R.S.E., Professor of Forensic Medicine and Public Health in the University of Glasgow. With 130 Illustrations. Second edition. Edinburgh: E. and S. Livingtone. 1910. Pp. 784. Price 14*s*.

IN the first edition of this work the plan was adopted of combining in a single text-book or manual the subjects of medical jurisprudence, toxicology, and public health. Whilst this combination had some advantages, it was at the same time not unattended by certain drawbacks. As the subjects tended to expand it became increasingly difficult to maintain the combination in a single volume such as would result at once in a handy book for the student and a work of reference for the practitioner. These considerations have induced the author to issue the present edition in two separate volumes, of which the one now under consideration deals with medical jurisprudence and toxicology. We think that the change is a wise one, and Professor Glaister has now produced an excellent manual on these two subjects. He has had an unusually wide experience in the field of medico-legal work and practice, and out of the large store of material which he has accumulated during 25 years he has selected exactly the right matter for the purpose of fully illustrating and verifying the text. This renders the book all the more interesting and more useful to the members of the legal as well as the medical profession

All the various subjects coming under the heading of medical jurisprudence are dealt with fully and in terms that are easy to follow and understand. The difficult matter of identity, for instance, is discussed in a way that rivets the attention and conveys instruction on points where a practitioner may at any time be required to give an opinion. The chapter on death by lightning and electricity gives information which will not be found in the ordinary medical text-books. Some interesting instances are given of death by lightning. One of the most remarkable is that in which lightning struck a tent near Waringstown, Ireland, in which a congregation of about 250 persons were assembled. In all 60 persons were simultaneously struck and were thrown upon the floor of the tent in various states of insensibility. Some recovered consciousness quickly, others at longer intervals; but in the end all recovered consciousness with the exception of two men, one of whom appeared to have been killed outright, the other surviving for some minutes after having been struck.

Wounds in their medico-legal relations are described at length, and numerous instances are recorded showing the difficulties which may be met with in forensic work. This section deserves close study, for at the present time a very fierce light beats upon the medical man whose professional duties involve him in forensic procedure of this sort.

The differential diagnosis of states of insensibility occupies a separate chapter in its consideration. There is no part of the work of the divisional surgeon of police, or of the medical practitioner who may be called in by the police, more difficult than the diagnosis of the cause of insensibility of persons who are either brought to the police station or are found in the public streets in an unconscious condition. Professor Glaister has arranged his material most ably, and really valuable assistance may be obtained by a study of his remarks.

In this edition the various subjects have been brought into line with present-day advancements. Some of the chapters have been largely rewritten or remodelled, many have received substantial additions, and all have been carefully re-edited. More detailed attention has been given to lunacy law and procedure, and some enlarged consideration of the subject of anæsthetics and their administration has rightly been thought necessary. In the section of toxicology the number of poisons described has been added to. The work is admirably illustrated, considerably increasing the interest of the letter press.

We consider this work a good text-book for students and a reliable work of reference for practitioners.

Wounds in War: the Mechanism of their Production and their Treatment. By Colonel W. F. STEVENSON, C.B., K.H.S., R.A.M.C. (retired), B.A., M.B., M.Ch. Dub., late Local Surgeon-General and Professor of Military Surgery, Royal Army Medical College, London. Third edition. London: Longmans, Green, and Co. 1910. Pp. 559. Price 16*s.* net.

THAT a third edition of this work is called for after the lapse of so short a time since the second edition is an indication of the favour in which it is held. Besides a call for a new edition in order to supply the demand there is another reason for reissuing the work, which is that since the last edition was written the surgical history of the cases which were observed in the Boer war has been completed, and because a war on a vast scale has taken place between Russia and Japan, from the happenings in which some useful lessons are to be learnt.

Colonel Stevenson was editor of the "Report on the Surgical Cases Noted in the South African War, 1899–1902," and explained how it was that much of the material afforded by that war was lost to the science of military surgery, for the medical officers found themselves in the presence of much more medical and surgical work than had been expected or for which provision had been made, and, as a consequence, very little time remained for note-taking, and the materials for the report were much more meagre than under favourable conditions they should have been. For this reason the statistics given in this work—namely, 6·3 per cent. of total casualties over strength—cannot be taken as the true statistics for the whole war, which would probably show results less favourable than the statistics indicate. This would still be a far lower rate than was predicted for modern firearms in war, and than occurred in the Russo-Japanese war in Manchuria, 1904–05, where the Russian loss was 12·4 per cent. of those engaged, and the Japanese 14·5 per cent. Taking into consideration the enormously extended effectiveness of modern firearms, the comparatively low percentage of casualties experienced in the Boer war must have been due to the long ranges at which, for the most part, engagements were fought, the care used to take advantage of cover, and the open formations in which the troops were placed. When attacks are pushed home and ranges become short the percentage of casualties will be far higher amongst the troops actually engaged than the average for the whole army in South Africa. It was under the latter conditions that much of the fighting was carried out in the late war in Manchuria, and the higher figures for the Russo-Japanese war are probably thus explained.

In reviewing the second edition of this work we said: "There seems to be a general impression in the profession of this country that penetrating gunshot wounds of the abdomen were not nearly so fatal in the Boer war as they were in former times. The author says he believes that some reduction will be found to have occurred in the mortality, but that the question can only be decided by the full statistics of the campaign, which are, of course, not yet available." Now that the statistics are complete, so far as it is possible to complete them, Colonel Stevenson states that the experiences of the Boer war have in no way changed the surgery of abdominal injuries as regards the propriety and necessity of operative treatment, but they have very clearly shown how the actual conditions of field service modified surgical practice in that campaign, and how probable it is that the treatment of these cases in war can never be expected to be carried out on the lines of a civil hospital at home, either as regards the number of cases operated on or the percentage of recoveries obtained after operation. The Boer war has shown that many penetrating gunshot injuries of the abdomen get well without operation; in some of these there were no symptoms and in others there were distinct evidences of visceral lesion. The war showed that many of the cases were so severely injured that from the first operation was out of the question, and that in other cases, somewhat less grave, operation was the only method offering a chance of recovery. The conditions prevailing in active service were so unfavourable, that success resulted in few instances, and surgical intervention was only justified in cases otherwise hopeless. The clamour which arose during the early stages of the Boer war against abdominal surgery in the field was directed against the theory of *necessity* of operation in abdominal wounds; it should have been aimed against operations in these cases only because of the unfavourable conditions under which they had to be performed. A different thing altogether, for it leaves the surgeon still to be the judge as to what are favourable or unfavourable conditions.

Of gunshot injuries of the spine, even those which are entered in the returns as "Recovered," the best that can be said of the majority is that they did not die from their

wounds previous to being invalided from the service. Their general condition can only be referred to as pitiable, and, sad to say, it is scarcely a matter for regret that the early mortality in these injuries reaches 78 per cent.

The means employed for the succour and treatment of sick and wounded in war have lately undergone much alteration, and the Geneva Convention was revised at a conference held in Geneva in 1906. These subjects are fully dealt with in a chapter which includes also a consideration of the effects of the use of small-arms in modern warfare. The duties and expectations of high efficiency in field ambulances, of their stretcher divisions, in the field, their collecting, dressing, and tent divisions, are clearly given in a chapter which will be read with interest by Regular and Territorial medical officers alike.

Mr. Mackenzie Davidson has added a good deal to his contribution on skiagraphic localisation, and Major Spencer has supplied some new illustrations of skiagraphs of bone injuries.

There can be no doubt of the value of the volume which has been produced. It carries the evidences of the large amount of solid work and careful scrutiny of statistics which has gone to its production, and it is a pity that there should be any part of it which we cannot completely praise. We must, however, state that the index is very meagre, and we think that in a work of surgical character and bearing the inclusion of a chapter on the mechanics of projectiles is a mistake. It matters little to surgeons what are the forces which combine to impart a parabolic path to projectiles if, on account of the variable air resistances, the actual path taken is no known regular curve, and we are inclined to agree with those who think that "the power a projectile has of producing injury" does not vary with the square of its velocity to nearly so great a degree as it varies with the physiological value of the part of the body that is struck. The formula MV^2 may not be wrong, but we agree with Colonel Stevenson in thinking that the experiences of the Boer war will not cause it to be modified.

Practical Obstetrics. By E. HASTINGS TWEEDY, F.R.C.P. Irel., Master of the Rotunda Hospital; and G. T. WRENCH, M.D. Lond., late Assistant Master. Second edition. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 491. Price 12*s.* 6*d.* net.

THIS is the second edition of the work formerly called "The Rotunda Practical Midwifery" by the same authors. The main alterations in this edition appear to be, besides a complete general revision, the rewriting of the chapters on the toxæmia of pregnancy, uterine inertia and contracted pelves, and the addition of articles on subcutaneous pubiotomy, hysterotomy, and infant digestion.

If we turn to the section on uterine inertia we find a definition of secondary uterine inertia which will certainly surprise students belonging at any rate to the London school. The authors term the condition commonly known as obstructed labour secondary uterine inertia, while of real secondary inertia, or as it is often termed exhaustion of the uterus, they say but little. According to the authors "secondary uterine inertia is associated with the signs of obstructed labour." That this is not the customary use of these terms in the Dublin School of Obstetrics appears clear from a reference to another well-known text-book written by one of the teachers of this school in which the important distinctions so clearly laid down by Braxton Hicks in his classical paper are carefully and accurately described. We would recommend a study of this paper to the authors; it is to be found in the ninth volume of the Transactions of the Obstetrical Society of London.

In considering the treatment of cases of rupture of the uterus the authors condemn hysterectomy and recommend plugging in all cases in which it is possible. That many cases recover after plugging we can certainly affirm, but in these cases we have always had grave doubts as to how much of the successful result could be attributed to the method of treatment. In slight cases or cases of incomplete rupture plugging is often associated with recovery, but in severe cases it is practically of no avail. We cannot agree with the authors when they recommend if possible the delivery of the child through the tear by the vagina, even when it has passed into the peritoneal cavity. The statement in the section on the treatment of contracted pelves that 50 to 70 per cent. of premature children die within the first year of life is not in accordance with the most trustworthy statistics. Figures are not available for the accurate estimation of the death-rate in this country, but in Dresden and in Halle Leopold and Lorey record a mortality during the first year of life actually less than that of children born at full term, while the average immediate death-rate of children born after the induction of premature labour does not exceed 25 to 30 per cent.

The authors recommend hysterotomy in certain conditions, an operation in which we fail to see any advantages over ordinary Cæsarean section. In reality it cannot as a rule be performed extra-peritoneally, and indeed the authors actually recommend cutting through the parietal peritoneum and opening the peritoneal cavity, and since they do not consider it a suitable operation in cases where the cavity of the uterus may be septic we cannot believe that it has any real advantages, while it often entails the greatest difficulty in the delivery of the child. The authors appear to have been exceptionally fortunate, since they have not had to perforate a living child in their hospital for a great number of years, nor have they ever had to sacrifice a child in this way in private practice.

This book will be read with interest as an exposition of the present teaching of the Rotunda Hospital, with much of which, rightly or wrongly, we are not in agreement. But while we think it necessary to show this, we have not lost sight of the fact that the work is the outcome of a large experience, and for that reason demands careful study, while it contains many undoubtedly valuable lessons.

La Pratique des Maladies des Enfants (*Diagnostic et Thérapeutique*). Published in fasciculi by Dr. APERT, Dr. BARBIER, Dr. CASTAIGNE, Dr. GRENET, Dr. GUILLEMOT, Dr. GUINON, Dr. MARFAN, Dr. MÉRY, and Dr. SIMON, of Paris; Dr. ANDERODIAS, Dr. CRUCHET, Dr. MOUSSOUS, and Dr. ROCAZ, of Bordeaux; Dr. WEIL and Dr. PÉHU of Lyon; Dr. CARRIERE of Lille; Dr. HAUSHALTER of Nancy; Dr. DALOUS of Toulouse; and Dr. LEENHARDT of Montpellier, &c. Vol. III. (*Diseases of the Appendix, the Peritoneum, the Liver, the Kidneys, the Pancreas, the Blood, and the Lymphatic Glands.*) 89 illustrations and 12 coloured plates. Paris: J. B. Baillière et Fils. 1910. Pp. 432. Price 12 francs.

THIS book represents the third volume of a systematic handbook of medicine which deals with the diagnostic and therapeutic aspect of disease in children. The present volume is concerned with the disease of the appendix, the peritoneum, the liver, the pancreas, the kidneys, the lymphatic glands, and the spleen. The contributions to the work as a whole are confined to authors who write in French, though several of them are not of French nationality. In this volume, however, each article is from the pen of a French physician. The diseases of the appendix and peritoneum are described by Dr. Haushalter, professor of pædiatrics at Nancy. Professor Castaigne, of the Faculty of Medicine in Paris and M. L. G. Simon contribute articles on the symptomatology and treatment of diseases of the liver, pancreas, and suprarenals. It is interesting to note that diabetes is grouped among diseases of these

organs. Among the diseases of the liver is included that condition of colourless stools in children to which we believe Dr. W. B. Cheadle first gave the name of "acholia." This disease was at one time called by Dr. S. J. Gee "cœliac disease," a term which is quite comprehensible, since it implies a disturbance of the nervous supply of the liver, spleen, and pancreas, and possibly also of the duodenum and small intestines. Many cases of acholia are presented by infants and children, in whom the pancreatic functions are undoubtedly disturbed. Professor Castaigne and his collaborator, however, describe acholia as a disease of the liver, and devote considerable space to the description of Dr. H. Triboulet's method of estimating the colouring matter contained in the stools. He contrasts acholia with a pleio-chromic condition in which there is excess of stercobilin. A colour reaction is obtained by adding a sublimated acetic acid solution to a small quantity of fæces shaken up with water. The reaction shows itself within an hour, and a diagnostic and prognostic opinion may be based on the results observed. Normal stools give a violet-pink colouration due to the presence of a normal quantity of stercobilin. Excess of the latter colouring matter affords a reddish tint which is specially deep in the deposit at the bottom of the tube. Of fatal significance is decolouration of the supernatant fluid and a colourless or light grey colour of the precipitate, for such a condition implies very serious disturbance of liver function.

On the subject of hepatic insufficiency Professor Castaigne and his colleague make several interesting observations and refer to the work of Richardière and Mauban. These writers point out that periodic vomiting of the nature of migraine can occur in children without acetonæmia, and in such cases the liver is for the time being in a condition of suspended function. It is thus easy to understand how these recurrent attacks occur in children with hereditary or family weakness of the liver (hepatism). A form of infantilism, of the Lorraine type, is described in this section as due to hepatic insufficiency. The account of this condition is not, however, convincing; it appears more likely that such reported cases are instances of pancreatic insufficiency rather than liver insufficiency, or possibly a combination of the two.

Professor Leenhardt of Monpellier gives an admirable account of the diseases of the blood and lymph glands common to children.

From the point of view of practical medicine this volume appears to us to leave nothing to be desired; the authors who contribute to it are all physicians who may be said to be specialists in these particular lines. Each section is complete in itself, and the treatment which is based on the symptomatology is practical and thoroughly up to date.

Duodenal Ulcer. By B. G. A. MOYNIHAN, M.S. Lond., F.R.C.S. Eng. Illustrated. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 379. Price 18*s.* net.

THE recent discussion at the Royal Society of Medicine on the treatment of duodenal ulcer revealed a wide divergence of opinion on nearly all the points connected with this lesion. While, on the one hand, some held the view which may be termed classical, that duodenal ulcer is not very common, and that even when it exists it may be satisfactorily treated in the majority of cases by diet and medicine; on the other hand, it was maintained by several of the speakers that ulcer of the duodenum was a comparatively common lesion, that it gave rise to well-marked symptoms during life quite apart from hæmorrhage, and that therefore it could be diagnosed with ease and certainty. Most of those who held these views further maintained that immediately a chronic duodenal ulcer is diagnosed it must be treated surgically without loss of time. One of the most, perhaps the most, energetic of the speakers belonging to what may not unreasonably be termed the more modern school was Mr. Moynihan, and it is therefore useful and valuable to have presented to us in the convenient form of a volume the arguments which can be advanced in favour of the more active methods of treatment.

It is certain that ulceration of the duodenum is not always recognised. Perforation has occurred in no small number of cases where no suspicion had arisen previously that any duodenal lesion was present. Moreover, it is now recognised that no small percentage of ulcers which have been regarded as affecting the gastric wall near the pyloric orifice have really been situated on the duodenal side of the sphincter, and have been, in fact, ulcers of the duodenum. But though nearly all observers will be ready to admit that the number of duodenal ulcers has been under-estimated, it is an entirely different matter to accept the newer view that duodenal ulcer is as common as some would think it to be. It is claimed that a large proportion of affections of the stomach, which have been looked upon as functional in origin, and that many of the conditions which have been scribed to neuroses, are really the results of ulceration of the duodenum. To quote Mr. Moynihan, "There are few diseases whose symptoms appear in such a definite and well-ordered sequence as is observed in duodenal ulcer." The pain is felt not immediately after food, but two or three hours later; so that it appears when the patient is beginning to feel hungry. The relief of the pain by food is very marked and the pain is very liable to wake the patient up somewhere about 2 o'clock in the morning. It seems that the symptoms which Mr. Moynihan and his followers ascribe to duodenal ulcer are those which are commonly attributed to hyperchlorhydria. "These are the characteristic symptoms described by the patient in the anamnesis. Upon them alone a confident diagnosis of duodenal ulcer may be made."

Here is a very definite cleavage of opinion, and at present it can hardly be said that the holders of the newer view have proved their point. As to the differential diagnosis, Mr. Moynihan is very confident. He tells us that "the only difficulty likely to be encountered in making an accurate diagnosis of duodenal ulcer is concerned with the discrimination of this condition from cholelithiasis," and then he goes on to say that in a consecutive series of 100 operations wherein he had made a diagnosis of duodenal ulcer an error was committed in three cases. In two of these gall-stones were present, and in the third gall-stones and appendicitis. We are further told that "one of the most authentic features in duodenal ulcer is this recurrence of attacks in cold and wet seasons." When severe hæmorrhage is present, shown either by hæmatemesis or by melæna, Mr. Moynihan has found splenic anæmia to be present when other observers have diagnosed duodenal ulcer. Supposing the diagnosis is made, no doubt is felt by the author as to the treatment to be adopted. "In my opinion the treatment of a chronic duodenal ulcer should always be surgical." He informs us that "in a first attack, or even in a second, medical treatment may be tried, but when attacks occur in the typical manner ..... the lesion found is of such a nature that any other than surgical treatment is not worth considering. It is safer, speedier, and more certain than any other mode of treatment." If the ulcer is small, placed on the anterior surface of the duodenum, and free from adhesions, it may safely be excised and the wound in the duodenum

closed. In the very great majority of cases the operation of gastro-enterostomy is the most applicable, and the results are most satisfactory, but in order that it may give permanent relief the ulcer must be so large as to offer obstruction.

However much opinion may be divided on the diagnosis and treatment of duodenal ulcer there is little diversity of opinion as to the diagnosis and treatment of a duodenal ulcer that has perforated. Mr. Moynihan has had 11 cases of this accident in which he operated, and of these 7 recovered. The appendix to this book should prove of great value to those investigating the question of duodenal ulcer and its treatment, for it contains a detailed statement of all the cases (186) operated upon by Mr. Moynihan to the end of the year 1908 with an analysis and summary. This has been prepared by Mr. Harold Collinson, assistant surgeon to the Leeds General Infirmary. From the analysis we find that three of the patients were under 20, the youngest being 17, while the oldest patient was 67 years of age. The largest number of patients in any decade was 56—namely, between 31 and 40. Seventy of the patients gave a history of bleeding one time or another, 17 had hæmatemesis, and 23 melæna alone. Upon the 186 patients 194 operations were performed, 8 patients being operated upon twice. In 160 of these operations posterior gastro-enterotomy by simple suture, with or without infolding of the ulcer, was performed. As to the operative results, 4 patients out of the 186 died as the result of the operation—that is, 2·15 per cent. One of these died from acute intestinal obstruction, another from uræmia, a third from perforation of a jejunal ulcer, and the fourth from acute tuberculosis.

We have said sufficient to show that in this work we have an admirable presentation of the newer view of duodenal ulcer, and its perusal is essential to all surgeons who would be *au courant* with the more advanced theories on this important matter. The book is well illustrated and excellently printed. Is it pedantic to point out to Mr. Moynihan that the word melæna is plural?

Practical Hydrotherapy. By CURRAN POPE, M.D., Professor of Physiotherapy, University of Louisville Medical Department. Cincinnati Medical Book Co. 1909. Pp. 646. Price 27*s.* 6*d.* net.

THE author remarks in his preface that much prejudice has hitherto existed against "baths," and believes that this is due to the purely empirical way in which they have been applied. At the various "spas" throughout the world the systematic employment of "waters" for therapeutic purposes is well organised, but in ordinary practice hydrotherapy can only be carried out under surroundings ill adapted for the purpose. Nevertheless, some knowledge of the technique and measures adopted would be of value to all practitioners; more especially the morbid conditions most likely to benefit by a course of treatment by means of baths, pouches, and the like should be generally recognised.

From the most ancient times water has been used as an agent in the treatment of disease, but in more recent years its employment has been concentrated in certain places where waters have been found to be impregnated with certain mineral ingredients and gases. The exact manner in which the use of the waters produces beneficial effects is disputed. While some observers maintain that it is the *régime* to which the patients are submitted which is the most important factor, others insist that the waters themselves possess curative properties due to "radio-activity" or some other unknown property. In the work now under consideration a good account is given of the various forms of baths, packs, and douches which may be employed. The written description is supplemented by excellent illustrations, which give to the reader a good idea of the technique required. The diseases in which hydrotherapeutic measures may be adopted are carefully considered. The complete manner in which this part of the work is carried out is indicated by the fact that whilst 193 pages suffice for the description of the methods that may be adopted, 405 are devoted to the purely clinical aspect of the subject.

As an adjunct to the general text-books on medicine and surgery this manual will be found useful, although, owing to the special training required for satisfactorily performing the majority of hydrotherapeutic measures, many of the directions will be found impossible to carry out in ordinary practice.

LIBRARY TABLE.

Sprains and Allied Injuries of Joints. By R. H. ANGLIN WHITELOCKE, M.D., M.C. Edin., F.R.C.S. Eng., Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford; Lichfield Lecturer in Surgery in the University. Second edition. London: Henry Frowde, and Hodder and Stoughton. 1910. Pp. 280. Price 7*s.* 6*d.* net.—The author's purpose is to supply certain details in the recognition and treatment of sprains and allied injuries which are not to be found in the ordinary text-books on surgery. These are the embodiment for the most part of his own personal experience, which in this branch of surgery has been abundant. The fact that, after the lapse of little more than one year, a second edition has been called for speaks well for the reception accorded to the first. The general character of the work remains the same, the only alterations being in the direction of amplification. There is an important chapter dealing with the sequelæ of sprains, mentioning eight varieties of preventable disability which may result from mistakes in the management of sprains, and another chapter, consisting of about 50 pages, is given over to the discussion of internal derangements of the knee-joint. The treatment recommended in cases of recurrence is that by radical operation limited to the removal of displaced or free portions of the cartilage. The operation of suturing the cartilage to the tibia is, in the author's opinion, invariably a failure. We regret to notice no reference to muscular atrophy of the great adductor muscle as a predisposing cause of knee-joint derangement. The methods of treatment which the author advocates are very fully and clearly described. The book is well and clearly printed upon good paper, but the illustrations are mostly from photographs. It deals in a practical way with important though minor injuries and should have a large circle of readers.

Food and Hygiene. By WILLIAM TIBBLES, LL.D., M.D. Second edition. London: Rebman, Limited. 1910. Pp. 672. Price 5*s.* net.—In our review of the first edition of this work we explained the nature and scope of it and expressed the opinion that the author had carried out his responsibilities well and had succeeded where not a few fail in harmonising theory with practice. In the present edition certain additions have been made in accordance with the advances which have been made since the first edition was published. The "sour-milk treatment" is discussed at some length. We are glad to see that the author points out that in some countries, such as Russia, Bulgaria, Arabia, and others, various sour-milk products have been used as articles of diet from time immemorial, and that therefore this treatment, which has recently come so prominently into public notice, is by no means a new product as some seem to have imagined. Dr. Tibbles gives a good account of the different forms of "sour milk,"

and mentions the various bacteria which have been isolated. His remarks on the therapeutic uses of the milk are worthy of note; they are optimistic but free from exaggeration. An alphabetical list of dietaries useful for numerous diseases has been added which will be found of service to the student and practitioner. The book gives a large amount of information on food and hygiene which is usually only found scattered through text-books and medical publications; it is of great advantage to have the facts collected together into one volume.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—The August number of this journal contains less than the usual number of original communications, but those which appear are of considerable interest. Professor August Bier describes his method of inducing local anæsthesia by injection of a solution of novocain into a vein after local anæmia has been produced by means of an elastic bandage. He notes the failure of suprarenal extract as an aid to the local anæsthetic when thus employed as contrasted with its value in Schleich's method. Mr. George Mackay discusses the causes and prevention of blindness, noting the frequency of corneal infection following extraction of foreign bodies by unskilled persons; and Dr. F. W. N. Haultain notes some practical points in the life-history of uterine fibromyomata, which he considers a potent cause of sterility. Under the heading of "Clinical Records" some interesting gynæcological cases are recorded by Dr. James Oliver.

The Medical Chronicle.—The main original article in the August issue of this magazine is a dissertation by Dr. Donald E. Core on the Relation of the Blood Pressure to the Pulse in Clinical Medicine. The author holds that isolated observations on the blood pressure are of little value, but that charts showing its daily variation are of importance when taken along with the record of the pulse. The article, which covers nearly 50 pages, does not lend itself to abstraction, it should be read. Dr. R. T. Williamson reports a case of a tumour in the region of the corpora quadrigemina; apart from the ordinary symptoms of cerebral tumour, the patient exhibited mental dulness, ataxia, and divergent strabismus.

The Birmingham Medical Review.—In a paper which is published in the July number of this review Miss Margaret Aulton discusses the industrial future of the sanatorium patient, noting how often patients from the labouring classes break down again after improvement in a sanatorium, and suggesting the provision of farm colonies for their subsequent treatment. She emphasises the necessity of compulsion in the notification, removal, and detention of tuberculous cases. Mr. G. Percival Mills contributes a note on the Pathology of Rodent Ulcer, which he considers to arise from the cells of the sebaceous glands.

Man.—In the August number of this magazine Mr. George C. Ishmael publishes an article on the Babinza or Babinja, a large cannibal tribe in the Belgian Congo. Among these people a wife who does not bear a child within a reasonable time is sent back to her father, who exchanges her with his son-in-law for another daughter or for a niece. A woman gives birth in a sitting posture, held by the back by another woman and by the thighs by two more, whilst a third sits in front to receive the child. Men are not allowed to be present at a delivery. The birth of twins is looked upon as an ill-omen, and if they both live the mother is suspected of witchcraft. Within two months after the confinement the woman resumes her ordinary avocations and the child is managed by the father.

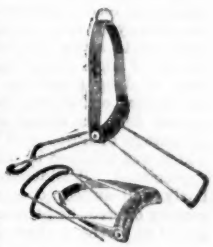
New Inventions.

THE "ANÆSTHEDONE" AND THE "SIMPLEX" CRUTCH.

Mr. Herbert Tanner, F.R.C.S., forwards us a description of two articles which he has "evolved," and explains that whilst he has only a parental interest in them, yet he thinks they should be useful to the profession.

With regard to the "Anæsthedone," Mr. Tanner has been trying for some two years to work out an apparatus which, as he explains, whilst not being, perhaps, scientifically accurate, should enable a practical person to give ether in vapour of different strengths with ease and safety, and that without the use of a rubber bag. He felt that the method of dropping or pouring the anæsthetic on layers of lint or gauze was too crude, and that an apparatus which would satisfy the scientist would be too elaborate to be of use to the average practical man. In the "Anæsthedone" Mr. Tanner submits that he has achieved the object he had in view—indeed, he has done more, for he finds that by the use of the apparatus approximately accurate doses of any of the usual anæsthetics can be presented to the patient; whilst the operator is required only to watch the patient's respiration and circulation as well as the index.

The "Simplex" Crutch, for use in perineal operations, is a compact and portable appliance for effecting the lithotomy position. By its use the legs and feet are held out of the way of the operator and his assistants, and the vessels and nerves in the ham are not pressed upon, nor is respiration impeded. Two strong flexible cords, not shown in the illustration, complete the apparatus. Both appliances can be obtained from Messrs. C. J. Hewlett and Son, Limited, Charlotte-street, London, E.C.



Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 8th, 1832.

COLD WATER IN CHOLERA.

To the Editor of THE LANCET.

SIR,—I have been much pleased by the perusal of Dr. Hardwicke Shute's paper, detailing the important results of his treatment of the collapsed stage of malignant cholera, by the unrestrained use of cold water.

In the treatment of the patients in the cholera hospital of Warsaw, in the summer and autumn of last year, I had frequent opportunities of witnessing the distressing sufferings occasioned by a restricted use of liquids of any kind—a small cup (about two tablespoonfuls) of *salop* being all that was allowed, and that only at intervals of half an hour or an hour. The consequence was, that the thirst became almost insupportable, and the hospital continually resounded with the cry of "water"—sounds more heart-rending than even the sight of the most violent symptoms of the disease. The alleged reason of this restriction, on the part of the medical officer, being, the supposed injurious effects of distending the stomach, on the operation of the remedial agents administered, which were chiefly large doses of calomel. I then had my doubts of the propriety of depriving the unfortunate patient of what nature so urgently demanded. This opinion was subsequently confirmed, when I found that the treatment adopted at Berlin with the greatest success in the stage of collapse was cold affusion, and allowing, at the same time, the free use of cold water as a beverage.

I am, Sir, yours, &c.,

Ipswich, Sept. 1, 1832. CHARLES ROBERT BREE.

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-EIGHTH ANNUAL MEETING IN LONDON.

THE SECTIONS.

ANÆSTHETICS.

FRIDAY, JULY 29TH.

President, Dr. F. W. HEWITT, M.V.O. (London).

A discussion on

The Present Position and Limitations of Spinal Analgesia

was opened by a paper (read in his absence) by Mr. E. CANNY RYALL (London). The indications and contra-indications for the use of spinal analgesia were considered, and the method was described as not being free from danger. The author thought that it should be restricted to cases in which there were weighty reasons for not employing inhalation anæsthesia or for which local or venous anæsthesia was inadequate. He described the technique of venous anæsthesia, which, he said, was applicable only to the extremities. He alluded to the small extent to which local anæsthesia was employed in this country compared with the scope there really was for it. The nature of shock was then discussed and the efficacy of spinal analgesia in preventing it. Mr. Ryall went on to affirm his belief in the perfect safety and efficiency of high spinal injections. He had never seen any sign of danger and the anæsthesia was always perfect. Abdominal operations, however, were, in his opinion, the special field for spinal analgesia, and he thought that the advantage of absence of post-operative atony of the bowel, which was obtained by this method, had not been sufficiently appreciated. Prostatectomy, again, was an operation peculiarly well suited to spinal analgesia. Military and naval surgery offered, he believed, a field in which spinal analgesia would be of the highest possible value. A *résumé* was given of the writings of many foreign authors as to the effect of spinal analgesia upon the urine, and it was concluded that novocaine was harmless in this respect. Mr. Ryall proceeded to advocate spinal analgesia for the relief of pain and spasm in certain cases and for sciatica. Amongst the contra-indications of the method perhaps the most formidable, he said, were tumours of the brain and disease of the spine or spinal cord. Hysterical and excitable persons, though not favourable, might well be operated upon under spinal analgesia.

Dr. J. BLUMFELD (London) said that he proposed to discuss spinal analgesia first as a routine method of anæsthesia, and secondly as the method of choice in certain conditions. It was first necessary, he said, to consider broadly the question of whether or not consciousness on the part of the patient was ever a desirable thing during operation. He pointed out the harmfulness of consciousness in many cases, giving instances, and he concluded that patients for spinal analgesia must be carefully selected from this point of view. His next objection to spinal analgesia lay in the want of certainty of producing perfect anæsthesia. This held good even in the best hands to an extent variously estimated at from 2 to 7 per cent. of the cases. For a number of reasons which he specified there were apt to be failures to at least this extent. In point of safety, also, he held that the method was as yet behind the point reached by general anæsthesia in competent hands. He believed that the chief utility of spinal analgesia would prove to be its power of minimising surgical shock, and he thought that in the future it would be used for this purpose in connexion with unconsciousness obtained by the use of small quantities of a general anæsthetic. He described the perfect relaxation of abdominal muscles to be obtained by spinal analgesia as a thing which could not be equalled by any general anæsthetic, but he showed that the great advantage to the surgeon of this absolutely flaccid condition was only to be obtained at the price of certain disadvantages which were described. He believed that spinal analgesia might be chosen in preference to general anæsthesia in healthy persons who feared unconsciousness and who were to undergo operations in the lower portions of the body which did not involve dragging, in amputations for diabetic gangrene, and in some cases of advanced abdominal disease and of serious lung disease.

Dr. W. J. MCCARDIE (Birmingham) said that in his review of the subject he included no cases in which cocaine was used. He dealt with eucaine, stovaine, novocaine, and with Joannesco's method. He believed that spinal analgesia had a place in the armoury of the anæsthetist, but that much experience in its employment was necessary. From very large numbers of statistics with which he had dealt he computed the death-rate of general anæsthesia at 1 in 3255 and that of spinal analgesia at 1 in 826. Several observers, however, had collected large numbers of cases without a death. In some cases fatality was attributed to badly sterilised preparations. It must be remembered that often the case of spinal analgesia was just the kind of case in which general anæsthesia too was especially dangerous. He reckoned failures at about 9 per cent., and by failure he meant cases in which there was insufficient analgesia, no analgesia, or necessity for general anæsthesia after puncture. Professor Joannesco's assertion that there was no danger and also no failure with spinal analgesia was not borne out by his experiences in America and here, and by the work of exact followers of his method. The experience of spinal analgesia at the General Hospital, Birmingham was not, the speaker said, encouraging. He went on to quote the statistics and reports of a number of foreign and colonial observers both for and against spinal analgesia as compared with general anæsthesia. After-pain in the wound was, he said, not an uncommon sequela. He believed that there was danger of collapse from psychic influence during spinal analgesia, and cases of hysterical paralysis following the process had been recorded. The combination of scopolamine and morphine with the spinal analgesia was no doubt helpful in obviating psychically caused troubles. The relaxation of the abdominal wall when spinal analgesia was successfully used for operations on that part of the body was certainly very complete; the intestines, too, were blanched and with no tendency to protrude. It was stated that the Trendelenburg position could be safely employed if morphine and scopolamine were previously administered. With regard to obstetrics, Morton said that the cervix and perineum were relaxed and that the uterine contractions were not interfered with; several injections, however, were generally necessary. Dr. McCardie said that, as regards after-effects, severe headache was the most commonly met with and lasted sometimes for days. Pain in the back was not uncommon. Retention of urine and paralysis for considerable periods of time had been often noted on the continent. He believed that diabetics were a class of patient in whose case, when operation was necessary, spinal analgesia might be urged, and that it should be valuable for naval and military service. Otherwise he thought that it was advisable only when general anæsthesia was markedly contra-indicated.

Mr. H. TYRRELL GRAY (London) said that his interest in spinal analgesia was solely concerned with its power to prevent surgical shock. If afferent impulses were completely blocked, then surgical shock was positively abolished. He would say nothing of the psychical origin of shock, for in children upon whose cases he had worked he saw no evidence of it. The most pressing problem, he said, was the accurate localising of the effect of the spinal analgesic. If localisation of effect were only accurate enough it would be safe to inject at any level, provided the respiratory nerves were not interfered with. If accurate localisation were achieved there would be, in his opinion, but one contra-indication—viz., spinal disease.

Professor J. T. MORRISON (Birmingham) preferred tropococaine to all other analgesics, and believed it to be the least toxic. In 173 cases he had met with none to give him any anxiety, and he had used spinal analgesia for patients of ages ranging from 10 to 81 years. Severe headache was the only noticeable after-effect in his experience; relaxation of the sphincters caused by the analgesic he had met with.

Legislation on Anæsthetics.

The PRESIDENT proposed a recommendation to the Council of the British Medical Association that

The Section of Anæsthetics fully approve the form of the proposed legislation suggested by the General Medical Council and by the Departmental Committee of the Home Office respectively, and recommend the Council of the British Medical Association, on behalf of the Association, to take such steps as they may think desirable to represent to the Privy Council and to the Home Secretary the need for the proposed legislation in the interest of the public safety.

He alluded to the present unsatisfactory position of unrestrained unqualified practice in anæsthetics and to the gratifying fact that the two bodies which had the matter under consideration had now reported in practically identical terms. Further, in answer to Sir William Collins in the House of Commons, the Home Secretary had promised to initiate legislation. Now, therefore, was the opportune moment for the British Medical Association to express itself in the same direction and to lend its support.

Mr. DIGBY COTES-PREEDY (London), in seconding the recommendation, discussed the proposed legislation from a layman's point of view, and from that standpoint it was, he said, to be most highly desired. There were no restrictions upon the sale, as there were none upon the use, of anæsthetics, which bodies were among the most dangerous that could be employed. He was only quoting from one of the reports referred to when he said that "this irregular state of affairs constitutes a grave menace to the public."

Sir WILLIAM COLLINS (London) said that he came to the meeting to learn from specialists, and he hoped to find answers to one or two questions which were sure to be asked in opposition to the proposed legislation. If such legislation were to come about future chroniclers might well be able to point to it as the first important step in the restraint of unqualified practice generally, and such a step might well be instituted in connexion with anæsthetics, for this was a case where the dangers of unqualified practice were extreme. It was not here a question of some trifling act or harmless drug, but it was a question of the abolition of consciousness and of the employment of some of the most potent drugs we possessed. He had asked the Home Secretary what action the Home Office would take on the reports of the General Medical Council and of the Departmental Committee, and the answer was that the reports were under consideration and that the Home Secretary hoped to propose legislation with regard to them. As to the educational side of the matter, he was referred to the recommendations of the President of the General Medical Council. Sir William Collins asked for specific information as to what the members of the section desired with regard to the respective powers of medical and dental practitioners where anæsthetics were concerned. There was never a time, he said, when the House of Commons was more favourably disposed towards the demands of scientific opinion, but members wished to feel sure that the latest word of science was really the last.

Professor MORRISON thought that the demands of the proposed legislation were too ideal and that the profession should be ready to take less. It was not practicable, he thought, to demand the presence of two qualified persons whenever an anæsthetic was administered.

Dr. V. G. L. FIELDEN (Belfast) spoke upon the necessity for education in anæsthetics.

Professor A. WALLER (London) thought that education was needed, too, for those who taught.

Mr. BUTLIN (President of the British Medical Association) alluded to the question of anæsthetising by dental practitioners in non-dental cases, an arrangement which appeared to be sometimes convenient in the country towns, and he also stated that he would be glad to further the prospects of the resolution when it came before the Council of the Association.

The recommendation was carried without dissent.

DERMATOLOGY.

FRIDAY, JULY 29TH.

President, Dr. PHINEAS S. ABRAHAM (London).

Some 18 cases of clinical interest were shown before the meeting commenced. Amongst these were examples of urticaria pigmentosa, Raynaud's disease, erythema perstans, ichthyosis, leucoderma, canities, multiple fibromata, and morphœa, together with cases of X ray dermatitis and X ray ulcers successfully treated by Hilton's method.

Sir JONATHAN HUTCHINSON (London) read a paper on

The Doctrine of Palæogenesis in Reference to Certain Symptoms.

As illustrations of this doctrine he dealt chiefly with certain modifications displayed by the integument of animals, including man. These changes concerned colour most frequently and most conspicuously, but were by no means restricted to it, for other modifications in the integument and its accessory structures often led to manifestations even more conspicuous than colour. All these conditions were subject to the laws of inheritance, but his contention was that there existed a fundamental and back-reaching inheritance which might overrule the forces usually classed under that name, and might bring the most varied species under its power. Atavism was a well-known term denoting inheritance from approximately immediate progenitors. Palæogenesis was a new term designed to include an infinitely wider range of facts, and to imply inheritance independently of species and to some extent independently of time. He suggested two hypotheses as a convenient means of explaining the colouration of the skin and appendages of animals in general. The first was that an archetype of the cutaneous envelope of the body common to all had been transmitted by inheritance with various minor modifications, all of which were capable of transmission by inheritance. The second hypothesis was that the parent form of the infinite variety of existing creatures was a cylindrical worm, constructed in rings, without limbs, and covered by skin, which was a very complex structure, containing great possibilities of growth and development. It consisted of several layers, enclosing in itself the germs of such structures as hair, nails, glands, and even teeth, and also elements capable of producing various colours. At a later period the limbs were formed by budding out from the sides, and in so doing they affected the distribution of the colours already present in the skin. The limbs pushed before them long pouches of the body-skin with its stripes or rings or spots of colour. This was definitely illustrated by the stripes of a zebra, for example. The conditions occasionally seen in the human subject in connexion with which he invoked the theory of palæogenesis were illustrated by the following: First, unilateral streaks on the neck, trunk, and limbs. To these the term "herpetic ichthyosis," or "unilateral ichthyosis," and many others had been given. Perhaps the term "Biett's bands," commemorating their first observer, and not involving any theory of cause, was the best. These streaks ought not to be described as unilateral, for they were almost always bilateral, although usually very unequal in their development on the two sides. We might recognise two forms of these bands: one in which the band was long but narrowed, and did not branch; and another in which it spread out in a paniculate manner like herpes zoster. These conditions were rare, but were fairly well illustrated in the Clinical Museum in Chenies-street, London, to some extent in the New Sydenham Society's "Atlas," and in some of the dermatological atlases. One of such examples was the linea fusca. Our forefathers knew under this name a brown line which extended from the pubes to the umbilicus or even to the epigastrium, and which assumed a deeper tint in pregnant women. It was an illustration of the fact that there was in the pregnant state a tendency to increase of pigmentation. Such conditions, however, were not peculiar to women, nor were they peculiar to the pregnant state. The linea fusca was the abdominal streak common to most animals made conspicuous by pigmentation. In the male sex it was often not only pigmented but grew hair; a band of hair might also unite the pubic patch with another patch on the mid-chest. In the human subject the dorsal streak, so common and conspicuous in animals, was seldom well-marked. It was said to be evident in Japanese children in the earliest months of life, and it could be recognised in many adult males. It was seen especially in those of dark complexions and of the Semitic family. With it were associated the manes of animals and a growth of hair over the lumbo-sacral region; he had been accustomed to call the growth of hair in this region "the porcupine patch," since it was the part upon which the porcupine developed its quills. Virchow observed it in the human subject, and attributed it to defects in the spinal column, the so-called spina bifida occulta, but he (Sir Jonathan Hutchinson) believed that it was the remains, palæogenetically, of the "porcupine patch."

Dr. J. L. BUNCH (London) read a paper on

Vaccine Therapy.

He said that vaccines were now used for widely differing diseases, but their action in cutaneous diseases was of special importance and served as a control (so to speak), because the result could be watched more easily than in diseases where the manifestations were internal. Dr. G. Pernet and himself had published already some papers on the treatment of skin

diseases by vaccines,[1] and he (Dr. Bunch) had also written on the subject in THE LANCET of Jan. 19th and March 23rd, 1907. In many cases the lack of success was due to the fact that a mixed infection was present For example, an ulcerative lupus vulgaris had been treated unavailingly with injections of tuberculin; cultures were then made, and staphylococci were found, and when staphylococci as well as tuberculin were injected immediate improvement resulted. Later the same patient had returned with the disease as bad as before treatment had been instituted. Cultivations proved that the bacillus coli was now present, and when a vaccine prepared from the bacillus coli was injected the lupus completely healed. The determination of the correct dose was very difficult; a patient who had not improved with a dose of 1-5000th of a milligramme of tuberculin had responded to a dose of 1-20,000th of a milligramme. He remembered a case of acne vulgaris which had been treated for some time with staphylococcal vaccines in varying doses without benefit; the opsonic index to staphylococci was found to be 1·45, so an injection of 20 million of acne bacilli was given with great improvement, but a repetition of the dose at the end of three weeks had had no good effect, and it was only when, after several failures, the dose had been reduced to 5 million bacilli that the lesions began to improve and finally cleared up. The treatment of localised streptococcal infections did not always necessitate the use of vaccines, but in cases with rapid spread of the infection, such as those cases of erysipelatous inflammation in which the streptococcus had entered through a mucous membrane, small doses of vaccines acted very favourably. A more unusual case which had come under his care was that of a man bitten on the hand by a cat. A dermatitis had spread from the wound to the whole hand and forearm, with considerable œdema. A pure culture of streptococcus pyogenes longus had been obtained from the wound discharge and also from an incision in the arm, and the opsonic index to streptococci was 5·3. Of a vaccine prepared from this culture a 5 million dose was given, and six days later a 10 million dose, and the dose was increased afterwards to 50 millions. The wound was also scraped and the arm incised with excellent results. It was a good working rule to inject smaller doses of dead cocci in proportion as the inflammation was more acute. This applied not only to cases of direct streptococcal infection by traumatism, but also to spreading erysipelatoid streptococcal infections where the site of inoculation could not be definitely determined. The administration of vaccines by the mouth had proved unsatisfactory and he never employed it.

Dr. J. GOODWIN TOMKINSON (Glasgow) read a paper on a case of

Pityriasis Rubra Pilaris

which he had shown at a meeting of the Glasgow Medico-Chirurgical Society on Dec. 10th, 1909. The patient, who was a man 30 years of age, stated that 16 years ago, after commencing work as a lithographic stone polisher, the palms of the hands became red and thickened. Seven months ago follicular papules had appeared on the proximal phalanges of the fingers, and later on the middle phalanges of the third and fourth fingers, and subsequently on the back of the hands, affecting in the main the skin over the first, second, and fifth metacarpal bones. Later the fronts of the wrists, the outer aspects of the forearms, and the backs of the elbows had become affected. Isolated follicular papules were seen on the lower abdomen, and large, horny, dark-grey follicular papules were seen over the dorsal convexity of the spine. In the summit of the inter-gluteal fold—namely, over the sacrum—the papules were closely aggregated, presenting a verrucose appearance, and a similar condition was present over both ischial tuberosities. The knees were similarly, but not so markedly, affected and there was some hyperkeratosis where the boot was laced. The soles of the feet were erythematous, the neighbourhood of the heels was markedly hyperkeratotic, and also the centre of the right sole. The forehead was slightly erythematous. A few comedones were present on the face and back of the neck. The scalp was scaly, but not markedly so; the affected areas of the hands, fingers, intergluteal fold, and ischial tuberosities were slightly erythematous. The erythema appeared to begin perifollicularly and to spread laterally until neighbouring centres of origin coalesced into a continous patch. The finger-nails were longitudinally striated. The papules throughout were distinctly follicular and contained a central horny cone. On passing the hand over the lesions a distinct grater-like sensation was experienced. There was entire absence of itching and other subjective symptoms; the general health was good and the urine was normal. Histological examination of a section of skin taken from an affected area of the right hand revealed hypertrophy of the corneous and mucous layers of the epidermis, especially well marked in the region of the hair follicles, where the hairs were ensheathed by horny accumulations of the hypertrophied lining of their follicles. Here and there the dermis showed slight infiltration. Stelwagon had observed that the disease originated in the majority of cases in childhood or early youth. This suggested some as yet undiscovered congenital deficiency in the cutaneous tissues, and the increased cornification might be a protective effort on the part of nature.

Dr. J. F. HALLS DALLY (London) read a paper entitled

Recent Experiences in the Treatmont of Favus.

He had had personal experience of favus in the London County Council Special School in the East-end of London, which had been opened in June, 1906. Since that time 152 children had been treated for this disease. X ray treatment was commenced in May, 1908. Of the 152 children 82 had had X ray treatment, and 132 had been discharged recovered, 1 had been discharged for observation, 7 had been discharged with no note as to their condition on leaving, 11 had left for various private or family reasons, and 1 had died from pulmonary tuberculosis. In all the cases described as "cured" there had been careful microscopical examination of the hairs, and the majority had been kept under observation after leaving the school. In only one case was any fungus found a year and a half later. During the six months ending in June, 1909, there were 24 children admitted; during the six months ending in December of that year there were only 7 cases admitted. In May, 1910, the school was closed from lack of new cases to be treated. With one exception (Irish) all the children had been aliens. In many cases the sulphur-yellow scutula and cups described in the text-books had not been present. Kienbock's method, as described by Adamson in THE LANCET (May 15th, 1909, p. 1378), was employed when administering the X rays; by this method the entire scalp was epilated in five exposures. He had found the Chabaud and the Dressler tubes the most suitable, the latter having the advantage for its cheapness and capacity to stand a large current. Pure izal or cyllin was painted on weekly, or dilute ointment of ammoniated mercury was rubbed in daily, and in nine weeks the hair began to grow again.

Dr. G. PERNET (London) read a paper on a case of

Pemphigus Vegetans.

He said that this disease had been mistaken for syphilis until described by Neumann, and the mistake continued to be made now and then even by dermatologists. In the case of which details were given the patient was a man aged 39 years, who had had gonorrhœa at the age of 19 years but had had no history of syphilis. The disease commenced when he was 37 years of age; it first attacked the upper lip, and during the ensuing six months it spread to the pubes, groins, thighs, face, scalp, and axillæ. Some X ray treatment had had no good effect. The case had also been recorded as one of generalised condylomata and treated with anti-syphilitic remedies. Later he had had arsenic, quinine, iron, and creolin baths and soothing lotions. The face, scalp, and thighs had become covered with thick yellow crusts over soft papillomata, and in the axillæ these growths had resembled epithelioma. Over other parts of the body there had been raw discharging sores. The temperature had risen to 100 2° F.; the urine contained no albumin or sugar. Polyvalent serum had been injected with marked benefit, but relapses had occurred. At one time staphylococci had been found in the blood. A blood count had revealed polymorphonuclear cells, 65 per cent.; large mononuclear cells, 2·5 per cent.; lymphocytes, 18·5 per cent.; eosinophiles, 13·5 per cent.; and transitional forms, 0·5 per cent. The patient died, and at the necropsy there had been found a fatty liver, an enlarged soft spleen, cloudy swelling of the cortices of the kidney, vegetations at the edge of the pulmonary valve in the heart and in the lower lobes of both lungs, areas of semi-solid tissue, œdematous and friable. Pemphigus vegetans was undoubtedly due to the action of some micro-organism. At the meeting of the British Medical Association in 1904 he

[1] British Journal of Dermatology, October to December, 1906.

had described a case in which a pure culture of the bacillus pyocyaneus had been found in one of the bullæ.

Dr. DAVID WALSH (London) read a paper on

Plant Dermatitis

among the lily-pickers in the Scilly Islands. On proceeding to the islands for the purpose of investigating the disease he found that it attacked both those who picked and those who packed daffodils. It appeared on the hands and arms, also on the face, and in some cases became generalised. Some pickers escaped the disease altogether, some had only one attack, and some were so susceptible that they could not go on with the work. The most severe cases occurred in persons who had a scratch or cut on the hand. Certain varieties of daffodil were more poisonous than others. In a typical case the arms were covered with a discrete papular erythema, but in some cases there were vesicles and pustules. A generalised toxic disturbance occurred when the plant juices came in contact with a broken skin surface in some cases. Experiments with juices, tinctures, and active principles isolated from the daffodils had for the most part yielded only negative results. They had been conducted on Dr. Walsh himself, and he might be an immune individual. Inoculation with fresh juice of pheasant eye narcissi and with tincture of Scilly White produced a severe reaction with superficial excoriation of the epidermis.

Mr. WILLMOTT EVANS (London) drew attention to some points in connexion with the

Treatment of Hirsuties.

He recommended electrolysis for this purpose in preference to the X rays, which acted only as a temporary depilating agent. Strict cleanliness and antiseptic precautions prevented pustulation, and with a small current scarring did not occur.

Dr. R. B. WILD (Manchester) read a paper on some cases of

Actinomycosis,

with especial reference to treatment by potassium iodide. He said that for over ten years there had been no cases in Manchester, but in 1907 and 1908 four cases had come under his observation. The first case occurred in a lad aged 19 years, who had worked at "odd jobs," including the care and feeding of pigs. He had had swelling of the left cheek and abscesses for 14 weeks; these had been opened, and he had been given iodipin. X ray exposures were tried thrice weekly for a month without any benefit. Potassium iodide was then given in 40- and 60-grain doses three times a day and afterwards more frequently, the total maximum doses being 240 grains. Owing to the rapid elimination of the drug it was better to administer it in frequent doses, 30 to 40 grains to an ounce of water, taken in a cup of milk every two or three hours. The patient continued the treatment for 194 days without symptoms of iodism, except for a few days when he had "a cold." He was then so much better that he left the hospital and attended as an out-patient for six months longer, taking 60 grains daily of potassium iodide. He had been seen at intervals during the present year, and he remained well except for some swelling round the left eye and around the scars of the abscess incisions. In all he had taken 27,255 grains of the drug in 13 months. In the second case the patient, who was a butcher, aged 56 years, had taken small doses of potassium iodide very irregularly and had died from exhaustion in five months. The third case was that of a foreign Jewess, aged 43 years, seen first in February, 1908. Her condition had resembled, but had been less severe than, Case 1, the whole of the left side of the face and neck being swollen and studded with nodular inflammatory swellings; some of these were broken down and discharged pus and sero-pus, which contained actinomyces. She attended a hospital as an out-patient, and in addition to local sedative lotions she was given 120 grains of potassium iodide daily in divided doses in milk. She ceased to attend, considering herself well in eight months, by which time she had taken 13,280 grains of the drug. She was seen again in January and in May, 1910, and remained well. In Case 4 the patient was a woman, aged 40 years, who had undergone laparotomy for a tumour in the right iliac region behind the bowel. A few months later a red brawny swelling on the right hip broke and discharged, and a sinus was present in the scar of the operation. Actinomyces having been found in the pus, potassium iodide was at once ordered. The patient improved somewhat, but fresh places broke out again in spite of increased doses of the drug. She became too weak to take the iodide and died from exhaustion six weeks later. The necropsy revealed a healthy appendix and extreme infiltration in all the muscles round the hip, also in the bones of the pelvis and the lumbar vertebræ, and a perforation of the ascending colon. No source of infection was traced in these four cases. None had come under observation until some months after infection. No connexion between the cases could be traced, nor had they known any similarly affected individuals. The fact that such enormous doses of potassium iodide had been taken without any untoward symptoms was of interest. The diuretic action of large doses of a potassium salt was a possible explanation of the fact that symptoms of iodism occurred usually in cases where small doses were administered. When 120 grains of the drug were being taken daily other salts should be cut off, and foods containing common salt should be eliminated from the dietary.

Dr. ALFRED EDDOWES read a paper on the

Treatment of X Ray Burns.

He said that slight chronic cases of dermatitis on the backs of the hands were advantageously treated by the compound tincture of benzoin, painted on while the cracks were opened. It was a flexible dressing and its colour tended to exclude the light. The painful chronic ulcers which were rebellious to all ordinary remedies should be treated by Hilton's method. Around the ulcer was a degree of fibrositis causing tension on the nerve fibres. The problem in such cases was, to what depth and in what direction should the incision be made in order to relieve the nerve pain and to enable the gap to be filled up with healthy tissue. Dr. Eddowes then described the case on which he had operated, the details of which had been published by Dr. Agnes Savill in THE LANCET of Dec. 19th, 1909. The ulcer on the shoulder had broken down again in March, 1910, because the first incision had not severed the nerves coming up behind the humerus. Incisions should be deep enough to cut through all the nerves without endangering the vitality of the flap.

The PRESIDENT of the Section read a paper on

Some Varieties of Molluscum Contagiosum.

He said that the usual form of this disease was readily recognised by its pearly umbilicated excrescences, but some rare forms which had come under his observation were not diagnosed without difficulty, and he had not yet seen any published description of such forms. There was a variety in which the tumours were imbedded in the skin, with no elevation above its surface, and in which the central umbilication was hard to detect. He had seen such a form on the hands, and the microscope had verified the diagnosis. There was also an agminate variety in which the little tumours were so closely set together that they formed a flattened patch, somewhat raised above the surrounding surface of the skin. He had recently seen such a case in a young woman; she had on her neck a brownish, rough, and scaly oval patch of irregular outline, measuring 3 by 2 centimetres. This had been regarded and treated as "eczema," and at first sight it had resembled a chronic indurated eczema. The presence of other mollusca bodies in the neighbourhood had led him to suspect the patch, and the microscope had confirmed the diagnosis. He had been able to confirm Sir Jonathan Hutchinson's original observation, that the disease was found in those who frequented Turkish baths.

DISEASES OF CHILDREN.

FRIDAY, JULY 29TH.

President, Dr. ARCHIBALD E. GARROD (London).

Dr. J. MCCAW (Belfast) described a remarkable case of

Cyclical Vomiting

accompanied by acetone and diacetic acid in the vomited matters, breath, and urine. The patient, a female child, experienced the first attack at 2 years and 9 months, suffering for several hours with persistent vomiting and urgent dyspnœa. Six months later a similar paroxysm occurred, severe vomiting lasting three days and ceasing suddenly; dyspnœa was not so marked. A month later the third attack set in with slight vomiting but very intense dyspnœa resembling the air hunger of diabetes. At 3 years and 7 months the fourth attack came on, vomiting continuing

for 36 hours without dyspnœa. Calomel was administered, and a considerable increase in the carbohydrates was ordered in addition to proteid and fat in the dietary. A later attack was most severe; the urine was reduced to 2 ounces in the 24 hours, the child being cyanosed and apparently moribund. Two drachms of bicarbonate of soda were administered by the bowel, digitalis and ammonia being also given, and ultimately recovery took place.

Dr. R. HUTCHISON (London) commenting on the case said that the severe air hunger was very exceptional. In this condition the relation of vomiting to acidosis varied. In some cases acidosis preceded and apparently caused the symptoms, while in others acidosis followed the vomiting or was absent entirely. Probably more than one condition was included under the term cyclical vomiting.

Dr. F. LANGMEAD (London) said that there were: (1) cases in which acetone and diacetic acid occurred without symptoms; (2) cases in which these bodies accompanied other obvious disease, such as epidemic diarrhœa, pneumonia, septic sore-throat, diabetes, and others; and (3) cryptogenic acidosis, such as those of cyclical vomiting and delayed anæsthetic poisoning, in which drowsiness and headache occurred with furred tongue, glassy eyes, and signs of cerebral irritation or air hunger. Ten fatal cases had been recorded. The etiology was not understood. After anæsthetics a child might suffer at one time and not at another—so it was not idiosyncrasy; neither did it follow starvation with any constancy or carbohydrate withdrawal. Alkalies had been given without benefit in many cases, and in the five necropsies which had been made there was remarkable fatty degeneration of the liver.

The PRESIDENT considered that the question of etiology was more complicated than had been suggested. Oxybutyric acid was behind the acetone and diacetic acid found in the urine, and all the symptoms were the result of a profound blood change.

Dr. W. ESSEX WYNTER (London), Dr. ERIC PRITCHARD (London), and Mr. SAMUEL CATHCART (London) also spoke, and Dr. MCCAW replied.

Mr. J. KEOGH MURPHY (London) described by means of lantern slides the results of

Radical Treatment of Tubercle in the Ankle-joint and Tarsus in Young Children.

Diagrams were shown indicating the extent of disease and the wider range of excision, with the evidence of regeneration of bone in a number of cases.

Mr. D'ARCY POWER (London) and Mr. FRANCIS W. GOYDER (Bradford) discussed the subject, warmly congratulating the author on the excellent results of the "most conservative" treatment hitherto adopted.

Dr. OLIVE ELGOOD (Birmingham) read a paper on the

Practical Analysis of Human Breast Milk with Regard to Clinical Conditions of Mother and Child.

The results of research into the analysis of a number of samples of human breast milk taken throughout lactation from several individuals were embodied in a series of charts presented as lantern slides. The analyses were made for (1) fat and (2) solids not fat. Chart 1 showed observations on milk taken from four nursing mothers chosen at random out of the slum districts of Birmingham. The deductions drawn were: (*a*) Considerable variations in percentage of fat existed in milk taken from the average woman of the city slum; (*b*) constancy of solids not fat simultaneously existed; and (*c*) variations of fat did not depend upon period of lactation—i.e., neither fat nor solids not fat increased progressively in quantity as lactation proceeds. The next four charts showed weight curves of four infants each compared with the normal weight curve of Budin, and each showing the analysis of its respective mother's milk. From these it was found that with a variable quantity of fat the infant growth fell to a greater or less extent below the normal. With a constant quantity of fat the growth rate approximated the normal. The next three charts showed cases where three mothers (chosen for extreme poverty) were given for a definite period two good meals a day. During this time the charts showed a maintained increase in: (*a*) rate of infant growth; and (*b*) curve of fat percentage. In these the solids not fat showed no quantitative increase, suggesting that the fat is the most important constituent for the child's growth, and showing forcibly also the dependence of fat quantity, and hence of the infant's health, on the feeding of the mother. The last chart showed figures illustrating the relation of fat content to total quantity of breast milk at any given time. This, though (inversely) proportional to some extent, was not definitely so, as stated by some authors, notably Engel. This chart also showed that variations in the total quantity obtained at any time were independent of: (1) time of day, and (2) period of lactation. The paper also included a review of work already done on this subject and a description of the author's technique for the analyses.

Dr. LANGMEAD and the PRESIDENT commented on the subject.

Mr. H. TYRRELL GRAY (London) read a paper on

Lesions of the Isolated Appendix Vermiformis in the Hernial Sac.

A case was reported of a male child, aged 8 weeks, suffering from a large irreducible right inguinal hernia. At the operation the sole content of the hernial sac proved to be rather more than half the appendix vermiformis, which was inflamed, swollen, and surrounded with a large mass of plastic exudate. At its distal extremity the appendix was sharply kinked and perforated in all but its peritoneal coat. A drawing of the specimen was shown illustrating the inflammatory nature of the lesion and the complete absence of any evidence of strangulation. Reference was made to the rarity of this lesion, particularly in children, and attention was called to the contradictory opinions expressed as to the relative frequency of inflammation to strangulation. Fifty-eight cases were collected from the literature, foreign bodies, with one exception, being excluded. The analytical table of these cases showed that strangulation was twice as frequent as appendicitis, and occurred most commonly in femoral herniæ in women; the reason for the frequency in this situation was shown to be an anatomical one. The narrative and the symptoms supported the grouping of these cases, which received additional support from the observations at operation or necropsy. It was shown that a consideration of the history, symptoms, and physical signs rendered it possible to suspect the nature of the lesion in a certain number of cases, and the following conclusions were drawn: 1. Strangulation is twice as frequent as inflammation. 2. Diagnosis (collectively) rests on the symptoms and local signs. 3. Differential diagnosis rests on a combination of the following points: (*a*) age and sex; (*b*) the situation of the hernia; (*c*) narrative past and present; and (*d*) local signs, particularly in regard to rate of increase and actual size of the hernia. 4. The deceptive appearances at operation are likely to lead to accidents. Finally, the deaths, seven in number, were either due to failure to realise in time the serious nature of the lesion or to attempts at reduction by taxis. These fatalities were a warning against routine taxis and called for more detailed diagnosis of the contents of the sac in irreducible herniæ and earlier operation in doubtful cases.

Mr. R. CAMPBELL (Belfast) and Mr. HERBERT WADE (Enfield) cited additional cases.

Dr. ERIC PRITCHARD commended the use of

Banana Flour in Infant Feeding

in the proportion of one ounce to one pint of hot milk. It was cheap, wholesome, rendered the milk more digestible, and possessed a high nutritive value. The following comparative analysis was given:—

	Albumin.	Carbohydrates.	Fat.	Ash
Banana flour	2·8-4·3	77·7	1·0	2·7
Proprietary banana flour	13·0	67·0	3·0	2·5
,, barley food ...	5·13	82·0	0·97	1·93
,, oods (cereal)	9·2	81·2	1·0	0·7

GYNÆCOLOGY AND OBSTETRICS.

FRIDAY, JULY 29TH.

President, Dr. MARY A. SCHARLIEB (London).

Professor W. NAGEL (Berlin), in an interesting paper entitled

Is it Justifiable to Remove the Other Ovary if it Appears Unchanged when Removing a Proliferating Papillary Ovarian Cyst?

brought forward a number of statistics in support of the view

that it was not justifiable to remove the other ovary. According to Schmidt's and Lechner's statistics of Tauffer's clinic, 8·33 per cent. of all ovarian cysts were papillomatous. Tauffer reported that in 33 per cent. of his cases the disease was unilateral, and in 67 per cent. bilateral. Glochner reported from Zweifel's clinic that 60 per cent. of cases were bilateral. Hohn (Kiel) operated on 34 women for unilateral papillomatous cysts; in 18 there was no recurrence. Tauffer in 17 cases of unilateral cysts had traced 8 alive after five years. Hoffmeier in 30 cases of unilateral ovarian carcinoma had a recovery of 50 per cent.; 15 died in the first eight years. Tauffer out of 9 cases of unilateral ovarian carcinoma had 2 alive ten years later. Professor Nagel argued that the tendency of the second intact ovary to become carcinomatous was not great enough to indicate its extirpation. Hoffmeier reported 3 cases (2 carcinomatous, 1 innocent), Tauffer 3 cases (1 carcinomatous, 2 innocent), and Tromme 1 case (innocent) of unilateral papillomatous cysts in which the patient became pregnant and gave birth to a child after removal of the tumour. The speaker related two similar cases, and concluded that the extirpation of the healthy remaining ovary in papillary cystoma was held to be superfluous by Pfannenstiel, Glochner, and others. Even in carcinoma the same affection in the other ovary was not frequent. He thought that the danger of a possible second operation was in a young woman outweighed by the advantage of preserving the other ovary, which was proved by the cases of pregnancy reported to have occurred after the unilateral operation.

Professor S. GOTTSCHALK (Berlin) agreed entirely with Professor Nagel, and reported the case of a patient, aged 23 years, from whom he removed a large proliferating ovarian cyst and who afterwards became the mother of three children. He advocated the hemisection of the apparently healthy ovary in order to ascertain its condition.

Dr. J. A. C. KYNOCH (Dundee) remarked that in all the cases of multilocular ovarian cysts with papilloma that he had observed disease had followed in the other ovary, and therefore he advocated removal of both ovaries in these cases, but with papillomatous cysts he did not think the risk nearly so great, and that, if the patient was under 40 years of age, he would leave the second ovary.

Dr. J. MUNRO KERR (Glasgow) pointed out that it was most important to remember that papillomatous cysts varied in malignancy, and also that if the ovary was thought to be malignant then the uterus should be extirpated as well.

Dr. H. SPENCER (London) had never removed an ovary when it appeared to be normal, except for fibromyoma of the uterus. He regarded most papillomatous cysts as innocent, and out of 200 ovarian cysts he had removed, 50 were papillomatous. He did not think because there was carcinoma in one ovary therefore the other ovary would become carcinomatous.

Dr. W. W. TATE (London) stated that in his experience malignant papillomatous disease of the ovaries was always bilateral, and because of this, if he operated upon a case of malignant papillomatous disease of the ovary where the other remaining ovary was apparently healthy, he would nevertheless remove it.

Dr. W. BLAIR BELL (Liverpool) maintained that the importance of Professor Nagel's conclusions centred on the pathological findings. He agreed with the frequency of papillomatous tumours, but did not think because there was a great increase of the surface epithelium therefore the tumour was malignant. He diagnosed malignancy when the stroma had been definitely invaded. The important point was whether the malignancy or otherwise could be diagnosed at the time of operation. In some cases this could be done. For instance, cysts arising from the hilum of the ovary close against the broad ligament were innocent and the diseased ovary only need be removed. He thought that if there was any doubt as to the malignancy of an ovarian cyst at the operation, a frozen section should be at once made, which would take five minutes, and the question could then be settled.

Dr. LOUISE MCILROY (Glasgow) stated that in her experience papillomatous ovarian disease was usually bilateral. There was no clearly defined line between malignant and non-malignant cases from a macroscopical point of view. She quoted particulars of two cases where the cyst looked perfectly innocent, but was found on microscopical examination to be carcinomatous. She had knowledge of two cases where the uterus became involved with the cysts, and thought, therefore, that the uterus should always be removed in these cases.

Dr. F. MYER (Melbourne), after 22 years' hospital experience, felt bound to disagree with Professor Nagel, and thought that both ovaries should be removed.

The PRESIDENT thought it very difficult to be sure of a frozen section test, since she remembered one case in which the tumour was as large as a child's head, and on examination an adeno-carcinoma was discovered in one little portion only. As the result of her experience she regarded ovarian cysts as worse than solid ovarian tumours.

Dr. LOUISE MCILROY read a paper on

The Surgical Treatment of Fibrosis of the Uterus.

She held that palliative treatment of fibrosis of the uterus by means of drugs and pessaries was of little value, as the relief was of a temporary nature only. In the early stage of the disease fixation operations might prevent further advance in the condition, but in more pronounced cases they were useless. Curetting (sometimes repeated) gave relief from symptoms such as leucorrhœal discharges, but had not much effect if there was marked menorrhagia. For cases where there was considerable hæmorrhage the only treatment advisable was hysterectomy, and this operation should be performed without delay when it was found that other minor operative measures had proved ineffectual. She reported a case where repeated curettings were performed, later ventrofixation of the uterus, and finally hysterectomy had to be done for a cure of the patient's symptoms.

Dr. TATE had found that hysterectomy was the only cure for this class of case.

Dr. J. CURTIS WEBB (London) had treated a case very successfully by ionisation of zinc, placing the positive pole in the uterine cavity to get styptic effects. Theoretically, it would have been better to have placed the negative pole internally, as the negative pole caused softening, but it had the disadvantage that it also produced hæmorrhage, which was the principal symptom in fibrosis. The case he reported had been cured after 15 treatments, all other medicinal methods having failed.

Dr. COMYNS BERKELEY (London) did not see how ventrofixation could in any way alleviate the hæmorrhage due to fibrosis of the uterus, neither would he expect it to do so. He had had a large experience with these cases, and with the exception of electricity and steaming the uterus, had tried all the different methods of treatment advocated, and had found that hysterectomy was the only satisfactory method of treatment. The most difficult cases to deal with were those in which the patient was a young woman, say below 40, and in whom for this reason hysterectomy was a more serious procedure. He thought that many of these cases might be cured by Kelly's operation of cutting a wedge-shaped piece out of the uterus, thus reducing the size of this organ, and he had known this treatment to be successful in three cases.

Dr. HASTINGS TWEEDY (Dublin) advocated steaming of the uterus.

Dr. SPENCER thought that Kelly's operation was a good one in certain cases, and he also had had success with steaming of the uterus. When the case was approaching the menopause he thought that every endeavour should be made to postpone hysterectomy, and in these cases the arrival of the menopause cured the condition.

Dr. BLAIR BELL pointed out that there was a good deal of confusion concerning the pathology of these cases. Fibrosis did not occur unless the uterus had been infected or the patient had had children. He had never seen a case of true fibrosis in a young woman in whom the uterus had not been infected; neither did he believe such cases existed. He would never perform hysterectomy on a young woman with this condition. The cause of the hæmorrhage lay, in a large number of cases, in the endometrium, and he had had great success with calcium lactate, and would quite expect ionisation to relieve the condition, although he had never tried it. In some cases where treatment by drugs had failed he had found the thyroid gland enlarged, and on having this treated with the X rays the hæmorrhage had been cured.

Dr. KYNOCH pointed out that hospital patients could not afford the time for this repeated electrical treatment, and

that in his opinion hysterectomy was the proper treatment.

The PRESIDENT thought that fibrosis might exist at an early age, and that in a large majority of these cases hysterectomy was the only method of cure, that every effort should be made to preserve the uterus in women under 40, but over 40 it did not matter to the same extent. If a woman, therefore, expressed a wish to have her uterus removed rather than spend the best years of her life lying on a couch and suffering from repeated bleeding, she did not think that any obstacle should be placed in the way of having this treatment carried out.

Dr. ARTHUR J. WALLACE (Liverpool), in a paper on

Intra-peritoneal Hæmorrhage in Cases of Uterine Fibromyomata,

remarked that although many years had elapsed since Mathews Duncan pointed out that bleeding in cases of fibroids might occur from the tumour itself, literature contained few instances of such hæmorrhage into the peritoneal cavity. At the present time the number was under 20, and of these several were doubtful examples. Of eight well-authenticated cases, three proved fatal. The writer added a ninth case to these. The patient was a single woman, aged 31 years, whose history gave no ground for suspicion regarding the pelvic organs. After exertion she was seized with sudden abdominal pain and vomiting. She recovered from this, but ten days later had a more severe attack. Her medical attendant saw her and forthwith sent her into hospital. The menstrual history was normal. On examination there was found an abdominal swelling reaching 3½ inches above the pubes. It was extremely tender, and deep fluctuation was apparently obtained over it. Per vaginam the cervix lay far back and high up. A provisional diagnosis of an ovarian cyst with torsion of the pedicle was made. Next day the tumour was found to have doubled in size. Laparotomy disclosed an œdematous fibroid, sessile on the posterior wall of the uterus. The peritoneum contained dark fluid blood to the amount of about six or seven ounces. On the surface of the tumour was a varix, situated over a subperitoneal vein. At the time of operation there appeared to be no cause for the bleeding, although a diligent search was made. Myomectomy was carried out, and it was only after the operation that blood was noticed to be oozing through a small opening on the summit of the varix previously mentioned. Normal recovery followed. All the cases reported to date were briefly referred to, and the various lesions which had led to hæmorrhage were discussed.

Dr. C. J. NEPEAN LONGRIDGE (Cheltenham) read a paper on

Involution of the Uterus,

and pointed out that no advance in knowledge of the process of involution had been made for 20 years or more. He offered suggestions which he hoped would throw some light upon the real nature of the process and lead to further research upon the question. Involution was an autolytic degeneration of the uterine muscle. It took place in two stages—a rapid first stage and a slow second stage. The rapid stage differed from the slow stage in that in the former the uterus was comparatively anæmic and in reaction, whereas in the latter stage the blood was able to circulate more freely through the uterus and the reaction became alkaline. It might be noted that autolysis of tissues took place much more readily in an acid medium. Super-involution was prevented from occurring in the normal case by the fact that the circulation of the blood in the uterus became more free at the end of the rapid stage. The evidence in favour of this theory was partly chemical and was partly based upon clinical phenomena. The practical application of this theory might be found in securing a firmly retracted energetic uterus at the end of labour.

A lantern demonstration on Erosion of the Cervix was given by Professor GOTTSCHALK, and the interpretation of the pathological findings gave rise to an interesting discussion, in which Dr. BLAIR BELL, Dr. LOUISE MCILROY, Dr. COMYNS BERKELEY, Professor NÄGEL, and Professor GOTTSCHALK took part, but the differences in the opinions held, as Dr. Comyns Berkeley pointed out, were evidently due to the fact that the term "erosion" in England appeared to have, from the statements of Professor Nägel and Professor Gottschalk, an entirely different meaning from what it has in Germany.

LARYNGOLOGY.

FRIDAY, JULY 29TH.

President, Mr. HERBERT TILLEY (London).

Mr. SECCOMBE HETT (London) read a paper on

The Anatomy of the Capsule of the Tonsil and its Significance in Treatment of Diseases of the Tonsil.

He divided tonsils which required removal into (*a*) buried tonsils of early life; (*b*) flat tonsils; and (*c*) septic tonsils, usually small, tough, and adherent to the faucial pillars—these caused recurrent sore-throats. Mr. Hett laid it down that if the tonsil in a given case was functioning as a portal of infection it must be removed entire with its capsule. He found that out of 120 tonsils removed by the guillotine there was only one specimen in which the capsule had been removed entire. Usually the whole of the pars palatina was left behind; the tissue left showed active cell division. The guillotine did not destroy the peritonsillar space, and therefore quinsies recurred. In tonsils which showed no abnormal signs beyond hypertrophy the tubercle bacillus was often found. Dealing with adenitis of the cervical glands, Mr. Hett compared the advantages of the intra- and extra-buccal methods of removal. The anatomical relations rendered complete lymphatic extirpation very difficult, for the lymphatics lay in three groups: (1) deep, behind the jugular vein; (2) intermediate, in front of the jugular vein and behind the posterior belly of the digastric muscle; and (3) superficial, in front of the digastric muscle. The paper was supported and illustrated by the exhibition of carefully chosen macroscopic and microscopic specimens.

Dr. DAN MCKENZIE (London) pointed out that the Americans always practised enucleation, on the ground that the tonsil was always assumed to be diseased. In Europe partial tonsillotomy was the commoner practice, the argument being that the stump usually atrophied. Enucleation was a more severe operation, calling for greater skill and leaving a deeper wound. He advocated enucleation for (1) recurrent quinsies; (2) recurrent enlargements; (3) submerged tonsils; and (4) tuberculous infection of the cervical glands. In 50 cases of tuberculous glands Mr. Scott Carmichael had found tubercle bacilli in the tonsils of seven. Dr. McKenzie decried morcellement, which injured the faucial pillars and bruised the tissues. In referring to the anatomical relations, he reminded his hearers of the fascial slip extending from the anterior pillar to the lower anterior pole of the tonsil. He advocated the sitting posture, and pointed out as dangers: (1) cutting the superior constrictor of the pharynx; (2) cutting the faucial pillars; and (3) hæmorrhage, which either ceased of itself, or might be checked by applying peroxide of hydrogen, or pinching the tonsillar artery. In conclusion, he considered the operation of enucleation to be clean, complete, and radical; it was sometimes imperative, often advisable, and never contra-indicated except when the partial operation was also inadvisable.

Dr. STCLAIR THOMSON (London) said that he could remove buried tonsils with the capsule intact, using only the guillotine and volsellum forceps. The guillotine must be so small that it required to be threaded over the tonsil. He showed specimens to prove his contention.

Dr. J. H. BRYAN (Washington) said that in America, realising that arthritis deformans and other diseases might have their septic origins in the tonsil, surgeons left no tonsillar tissue behind. He advocated the use of the cold snare.

Mr. E. B. WAGGETT (London) denied the difficulty of enucleation so long as dissection be not attempted. If the tonsil be seized with Luc's polypus forceps, and then a small puncture made behind the tonsil at its upper pole, air entered between the capsule and superior constrictor and the tonsil with its capsule shelled out with ease. If snares be used there should be two handy. The écraseur of the first was tightened and left on, while the second was similarly treated; then the first snare was removed, and lastly the second. This method checked hæmorrhage. The choosing of an expert anæsthetist was important, because, among other reasons, the anæsthetist was also the first assistant.

The PRESIDENT said that in comparing the advantages of tonsillotomy and tonsillectomy it would be useful to know the relative amounts of after-pain, sloughing, adhesions, and change of voice in the various operations.

Dr. WILLIAM HILL (London) lauded the use of the snare with a small guillotine, but he admitted that after tonsillotomy he always felt heart-searchings as to whether he had left any tonsillar tissue behind.

Dr. J. DUNDAS GRANT (London), in selecting cases for operation by the guillotine, had developed an eclectic attitude of mind, lest he should leave some tissue behind. But the volsellum made it fairly safe. If any tonsillar tissue was left behind the crypts must be destroyed.

Dr. H. LUC (Paris) said that he used Vachez's cold snare, in which two blunt rings worked along a common horizontal axis in opposite directions. A per cent. novocain might be injected locally in place of a general anæsthetic.

Dr. J. DONELAN (London) stated that he used enucleation for recurrent cases of tonsillitis (hypertrophic).

Dr. G. W. SPOHN (Indiana) said that in America ether was used as an anæsthetic.

Dr. P. WATSON WILLIAMS (Bristol) remarked that he had noticed that in people who were of a rheumatic diathesis the tonsils were often atrophied; it was fair to argue that in these the portal of infection was unguarded, therefore the total removal of tonsils was undesirable.

Dr. H. L. LACK (London) said that he thought, with Dr. StClair Thomson, that with care the guillotine gave excellent results.

Mr. W. STUART-LOW (London) said that he strongly advocated enucleation in adults, especially when the tonsil had a long attachment extending from the apex to the base. Care must be taken not to dissect deeper than the peritonsillar tissue.

The PRESIDENT deduced at least this much from the mass of conflicting and weighty opinions—that it was necessary to choose the method for individual cases. If the pillars be thoroughly freed the guillotine or snare might in most cases be used.

Dr. W. S. SYME (Glasgow), Dr. L. HEMINGTON PEGLER (London), and Dr. N. C. HARING (Manchester) also took part in the discussion.

Mr. HETT, in reply, said that if Dr. StClair Thomson could, with the guillotine, remove all tonsils entire with capsules as perfectly as the one shown, he (Mr. Hett) could think of nothing better.

Dr. MCKENZIE and Dr. STCLAIR THOMSON also replied.

Dr. HEMINGTON PEGLER read a note on

Headaches in Association with Obstruction in the Nasal Passages.

Dr. Pegler was seriously handicapped by shortness of time and was compelled to give only a *résumé* of a great deal of thought and work on a very wide subject. Headache with an intranasal origin might have as reflex exciting factors: I., of the inferior turbinal—(*a*) erectile tumefaction; (*b*) polypoid degeneration; and (*c*) simple bony hypertrophy. II., of the middle turbinal—(*a*) simple enlargement; (*b*) cystic hypertrophy; and (*c*) polypoid mucous degeneration. The principal reflex foci might be: (A) anterior ends of the inferior turbinals; (B) posterior ends of the inferior turbinals; (C) anterior ends of the middle turbinals; and (D) septum nasi. The pain might be caused by (1) the pressure induced; (2) the pressure induced, *plus* the effect of toxins absorbed through deficient drainage; (3) toxic absorption owing to deficient oxygenation of blood; and (4) inflammatory, arising from the accessory sinuses. Dr. Pegler exhibited diagrams to show pain areas, and that these did not necessarily correspond topographically with underlying sinuses.

The PRESIDENT remarked that if in any case cocaine be applied on successive small areas supposed to initiate headache, the cessation of the pain showed that the spot had been found. He further announced that Professor Onodi (Budapest), who was unavoidably absent, had sent the contribution which he would otherwise have read.

Dr. PEGLER replied.

Dr. R. H. SCANES SPICER (London) read a paper on

Cancer of the Throat.

This paper consisted of further observations on the sites of predilection of malignant degeneration in the œsophagus, pharynx, and larynx in relation to augmentation of strain, stress, and friction incident at these sites in faulty postures and workings of the living body, and discussed the relative displacements in this connexion. Dr. Spicer, like Dr. Pegler, was compelled by shortness of time to deal in brief synopsis with a subject on which he had prepared an exhaustive thesis. He argued that the use of the diaphragm in the abdominal type of breathing was bad, squeezing all the organs in the abdomen, interfering with the portal system, and dragging down the trachea. The soft parts were squeezed against the hard endo-skeleton, and cancer originated in soft tissues near prominent points of bone or cartilage. Extrinsic cancers about the cricoid showed the same thing; they originated at the vocal process or in the anterior commissure—all points where rigid resistance met soft tissues. Cancer was not accidental in its topography; it was no bolt from the blue, but had predilectory sites in the throat.

The PRESIDENT congratulated Dr. Spicer on the large amount of data collected.

Mr. STUART-LOW said that irritation of healthy mucous membrane did not cause carcinoma. The mucosa must first be thin, weakened, and desiccated.

Dr. PEGLER asked Dr. Spicer for further enlightenment as to the real use of the diaphragm.

Dr. SPICER, in reply, agreed with Mr. Stuart-Low and referred Dr. Pegler to Duchesne's "Physiologie de Mouvement."

Dr. WATSON WILLIAMS showed a woman on whom he had most successfully performed an osteoplastic radical operation for frontal sinus suppuration.

Mr. HENRY T. BUTLIN, President of the Royal College of Surgeons of England, proposed a vote of thanks to Mr. Herbert Tilley, the President of the section.

The PRESIDENT of the section, in reply, averred that the thanks of the section were due rather to his honorary secretaries, and thanked Mr. Butlin for visiting the section.

The proceedings then closed.

MEDICAL SOCIOLOGY.

FRIDAY, JULY 29TH.

President, Dr. JAMES ALEXANDER MACDONALD (Taunton).

Dr. J. W. BALLANTYNE (Edinburgh) opened a discussion on

Social Aspects of the Falling Birth-rate.

He said that the "torrent of babies" of which Tennyson had once spoken was now reduced to a rivulet, and it was incumbent on sociology to take account of this new state of things. The experience of the past taught that tampering with the institution of the family led to social disaster, and there was unquestionably a disposition at the present time to attack the foundations of the monogamous system. This tendency was illustrated in the works of certain notorious writers of popular fiction. It was not, however, from this side that the most dangerous attack was being made on the family as the unit of society. A far graver evil was threatened by the growing practice of lessening procreation within the family. In view of this phenomenon he found it hard to wax enthusiastic over eugenics, for he thought that a stock-breeder would be hardly justified in trying to improve the breed by a weeding-out process when he had to do with a rapidly diminishing herd. The statistics of recent years had shown that the limitation of the family was by no means a Gallic prerogative. The process could be seen at work in this country and in the colonies, and in the middle and lower-middle as well as the upper classes. Its causes were very complex. One of the most important was the diffusion of neo-Malthusian literature, and in this connexion he thought that it would be well if more attention were given to ascertaining and making known the effects on bodily and mental health which resulted from the practice of methods for preventing conception. Another great cause was the growing love of personal comforts and luxury. Present-day civilisation seemed to have no room for the baby. Again, there was an increasing tendency to later marriage. There were other possible causes, regarding which he would speak less positively, for he recognised that the nature of their influence was less clear, and there was much to be said for them as well as against them. Amongst such causes he mentioned the higher education of women, their economic competition with men, and the increased employment of women in factories. Possibly the athletic training of girls had some influence also in this direction. He had been assured by one of his patients, who was herself an enthusiastic hockey-player, that girls who went in for that game were never able

to nurse their babies. Finally, he thought that they should not forget the increasing frequency of gynæcological operations which involved subsequent sterility. As corrective measures he advocated the dissemination of sounder notions on sexual matters, and he suggested that it might be desirable to limit the work of women in factories, to give a more specifically adapted character to the education of girls, and to offer fiscal bribes to fathers of families. He was doubtful, however, of the efficacy of many of these remedies, and in any case their influence would probably be slow. Meanwhile, he thought that a great deal might be done to counteract the effect of the falling birth-rate by checking infantile and fœtal mortality. There ought to be more attention given to ante-natal and neo-natal hygiene, and more particularly there should be a more complete and continued medical control of pregnancy. Finally, he urged the medical profession to recognise the duty that lay upon them to help in repelling the attack which was being made on the integrity of the family.

Mr. F. E. FREMANTLE (medical officer of health of Herts) presented a series of statistical diagrams showing the movement of the birth-rate and of population in different countries. He referred to the conclusions arrived at by the Registrar-General as to the amount of the decrease in the birth-rate in this country and as to the large measure in which the decrease must be attributed to voluntary limitation of fertility. It had been proved by Heron in his researches on the relation of fertility in man to social status that undesirable social conditions were associated with a high birth-rate, and this he (the speaker) held meant that the unfit were multiplying faster than the fit and that the quality of the race was being debased. Many causes contributed to keep down the birth-rate. It was abnormally low in towns which were the seat of textile industries employing a large number of women, while it remained high in mining districts where the women were mainly engaged in their homes. Employers advertised for servants without "encumbrances"; in model dwellings families were not admitted with more than two children; even Government departments forbade their servants to marry. In the upper classes the motive for limiting the family was mainly prudential, and behind the conscious motive was the unconscious submission to a false standard of values which led people to sacrifice everything real to the duty of keeping up appearances. The change in women's ideals had contributed much to bring about this evil. The girls' public schools boasted of the strong, determined, well-equipped young women whom they turned out to face the battle of life; but it was a mistake: they were unprepared for married life. Their ideal seemed to be to beat man at his game, but the only result they attained was to get out of practice at their own game.

Dr. J. W. HUNTER (Ruddington) from an extensive study of cases of Mongolian idiocy, maintained that the elder born children of a family were more liable to suffer from defective conditions than the younger ones. In working-class families this held good up to and including the seventh born child. With the eighth born there was a sudden sharp rise in the liability to "defect," and the type of "defect" was more severe than that affecting the elder born; with still later members this liability to "defect" steadily increased. The offspring of parents who were themselves elder born members of a family showed more "defect" than the offspring of parents who were younger members, this holding true up to and including the eighth born parent. It was with the children of the ninth born parent that the marked rise in "defect" was apparent. The "defect" at the close of the large family was generally of so pronounced a type that few such individuals survived to become parents, so that from a practical point of view it was the "defect" among the early born that was of importance. Dr. Hunter's statistics suggested that somewhere about 24 or 25 years of age a woman was best fitted to give birth to her first child, and that with regular pregnancies the power to reproduce well increased steadily until the mother reached 35 years of age, after which it declined very rapidly. He believed that a period of sterility, natural or artificial, lowered the quality of a child subsequently born. As abortion and sterility showed this relation to defect, he was doubtful of the advantages of trying to preserve the products of conception that could only be saved by special measures of ante-natal hygiene.

Dr. R. C. BUIST (Dundee) pointed out that the conclusions drawn from biometric inquiries should not be accepted in an uncritical spirit. The method was, no doubt, sound from a mathematical point of view, but the data to which it was applied and the results which it yielded had to be further considered from the economic and from the biological points of view. In Heron's researches, for instance, which had been referred to in the debate, the results could not be interpreted without a preliminary determination of how far the fact of living under undesirable social conditions was an index to character. He deprecated the assumption that the fall in the birth-rate was necessarily an evil. Whether it was so or not depended in part on the view they took of the economic factors which contributed to bring it about. He thought that they ought to maintain an attitude of scepticism towards the theories that professed to give a complete and simple explanation of the biological inwardness of a phenomenon of so complex causation as the falling birth-rate.

Mr. J. DULBERG (Manchester) agreed with Dr. Ballantyne as to the importance of counteracting the effect of the diminished birth-rate by preventing ante-natal and neo-natal mortality. He referred especially to the injurious results of bottle-feeding, and instanced the low infantile death-rate in the Jewish districts in Manchester where the women all suckled their babies. He was convinced that much moral and social evil resulted from the employment of women, especially married women, in factories, and he considered that they would be better employed as wet nurses.

Professor BENJAMIN MOORE (Liverpool) desired as a physiologist to protest against the assumption that a diminution in the birth-rate was something to be lamented. He thought that they ought to be on their guard lest they should seem to be advising people to breed as much as they could. In the lower and middle classes children were produced far too rapidly in the first years of married life. It was not necessary to get statistics to prove this: it was enough to look at the mothers and the children. An interval of three years between each child was desirable. When people talked of the danger of the upper and middle classes failing to procreate they forgot that these classes were being constantly recruited from the more capable members of the lower class. The association of high fertility with unfavourable environmental conditions was a normal phenomenon. The fall in the birth-rate which had occurred in this country was not excessive, and merely indicated that we were making the proper scientific adjustment to the economic conditions under which we lived.

Dr. GRACE CADELL (Leith) believed that the rise in the average age at marriage was an advantage; the children were stronger when the mother did not begin to bear until she was about 25 to 30. Luxury and vice were the chief causes of diminished fertility. She thought that the influence of gonorrhœa and syphilis in lowering the birth-rate was not sufficiently appreciated. Not only were these diseases, and particularly gonorrhœa, most potent causes of sterility, but the fear of contracting them and so incurring life-long invalidity deterred many girls from marriage. It was the duty of medical men to educate public opinion on this aspect of the question.

Dr. A. W. GILCHRIST (Nice) referred to the influence of social and political ideals in determining the movement of the birth-rate. The present position was the result of the *régime* of industrialism.

Dr. R. E. HOWELL (Middlesbrough) thought that they should regard the question rather as it affected the quality of the population. There were two classes in the State—those who paid and those who got. The second class was not supported by the State, but by the other section of the State, and the increasing burden which their support imposed had a considerable influence in causing the limitation of families in the middle classes. He advocated the sterilisation of drunkards and of other socially noxious persons.

Dr. FRANCES IVENS (Liverpool), speaking as a gynæcologist, wished to endorse what had been said about the importance of gonorrhœa as a cause of sterility. In an inquiry into this matter amongst hospital patients she had found that 14 per cent. of the cases she saw had had gonorrhœal infection, generally leading to sterility.

Dr. W. L. MUIR (Glasgow) said that he was not at all concerned at the fall in the birth-rate. He saw scores of children in Glasgow who ought never to have been born. It was

necessary to have regard to the capability of the country for feeding its inhabitants, and in this phenomenon which so much alarmed people he saw nothing more than the action of nature limiting population to the means of subsistence.

Dr. HELEN B. HANSON (London) remarked that the recent change in the ideals of women was increasing the integrity of family life by making wives the comrades of their husbands. Immorality was an important cause of diminished fertility, and immorality was promoted by keeping the status of women degraded, as could be seen, for instance, in India. The fall in the birth-rate in this country was due, in the first place, to the fact that the present generation were more thoughtful with regard to the future of their children; they realised more fully the risks of transmitting hereditary taints, and they also felt bound to secure that their children should not have to step down in the social scale, as was likely to occur with large families in the middle classes. Another cause of the falling birth-rate was the restriction on the labour of married women, and in this matter the State set a very bad example by compelling women to give up their appointments on marriage. At present, too, women naturally hesitated to marry and have children because they did not know what kind of time their daughters might have in the future.

Dr. ETHEL BENTHAM (London) protested against the tendency of some of the speakers to offer generalisations instead of evidence. She did not believe that healthy muscular development interfered with motherhood. The fundamental causes of the fall in the birth-rate lay in the existing economic conditions.

Lieutenant J. A. CLARK, R.A.M.C., referred to the limitation of the family in the classes from which army officers were drawn, and expressed the belief that an appeal to patriotic feeling would check this tendency.

Dr. B. DUNLOP (Brasted) thought that limitation of the family was necessary, but they should see that it did not occur predominantly in the best sections of the community.

Mr. L W. REYNOLDS (High Wycombe) thought that the speakers had dealt too exclusively with the question as it affected the lower classes. The limitation of the family in the upper classes was a very grave symptom. He thought that the medical profession and the Church could do a great deal towards awakening the public conscience on this matter, and he was glad to mention that the Bishop of Oxford had recently organised a committee in his diocese to investigate the whole question. It was nonsense to talk of having to limit the population while the colonies were hungering for British settlers.

Dr. BALLANTYNE briefly replied on the points raised in the discussion.

NAVY, ARMY, AND AMBULANCE.

FRIDAY, JULY 29TH.

President, Colonel ANDREW CLARK, A.M.S. (T.F.), (London).

Major S. L. CUMMINS, R.A.M.C., read a paper on

Isolation of Disease Carriers and Methods of Dealing with Them.

He said that under European conditions the chronic carrier was not a very great direct menace to the health of his neighbours. But all regular soldiers were liable to serve abroad, and a moment's consideration would show that the potential danger of a "carrier" was multiplied a thousandfold under military conditions in warm climates. In Europe, under peace conditions, the disposal of excreta was likely to be thorough. Flies, now proved by Major N. Faichnie, R.A.M.C., and others to be active agents in the spread of typhoid bacilli from infected fæces, were relatively few. Above all, the average health of the soldier was good. He was under his natural conditions of climate, and in the best position to withstand infection if it came his way. Abroad, all that was changed. The disposal of excreta was often imperfect, flies abounded, and the soldier was under new and unfamiliar conditions of life. Diet, climate, perhaps the exertion of active service, al tended to lower his health and diminish his resistance, while at the same time the paths of dissemination of typhoid bacilli from the ever-present carrier were greatly increased in number. He repeated that the danger from carriers, small under European conditions, was urgent in the tropics. How, then, should they deal with their carriers? They did not yet know how to cure them, so that door was closed to them. It was not enough to give them careful instructions as to what precautions they must take. Klinger mentioned that "chronic carriers who had been told to take precautions caused 78 infections." There was only once course open to them—they must get rid of them. They were a source of but little danger to the civil population, but in the army under conditions of active service or tropical climate they were likely to be very dangerous indeed. Their only course was what was now being done in the army—the men should be kept under observation for some months. If the excretion of bacilli was persistent, they should be discharged from the service, notifying their respective medical officers of health as to their condition. But with all their precautions they must realise that they would always have typhoid carriers in the army, and that fact must be taken into account. The best prophylaxis against the production of typhoid carriers was the prevention of typhoid fever, and that was best accomplished by sound general measures of garrison hygiene, and by diminishing the susceptibility of individuals and communities by anti-typhoid inoculation. It should be remembered that for every 100 cases of typhoid prevented, they had eliminated, say, 3 chronic and 97 temporary carriers, with their geometrically increasing potentiality of producing disease.

Dr. JOHN BROWN (Bacup) asked what experience had Major Cummins of the value of urotropine in regard to destroying the typhoid bacillus in the urine? In urinary diseases due to pathogenic bacilli it was very effective.

Fleet-Surgeon P. W. BASSETT-SMITH, R.N., said that the early diagnosis of typhoid carriers by high opsonic index and agglutination reaction was very important, but only the latter was practical in general use.

Major CUMMINS, in reply, said that in his experience urotropine, though useful in diminishing the number of bacteria excreted, was not in any sense curative.

Surgeon L. F. COPE, R.N., read a paper on

Air and Ventilation in Modern Warships.

He said that pure air was as necessary to health as pure food. In modern ships there were two main methods of ventilation: (1) natural, by means of ports, scuttles, and hatchways; and (2) artificial, by electric fans. He thought a perfect system of ventilation should be designed in such a manner that the following points were all ensured: 1. Complete and sufficient changing of the air without draughts. 2. In the event of natural ventilation failing there must be a system of artificial ventilation as good, if not better, to substitute for it. 3. In every case of supply or exhaust there must be provision for corresponding outlet or inlet. 4. If the air was to be heated it must also be supplied with moisture, so as not to lower its relative humidity. 5. The openings of all air trunks, whether connected with the supply or exhaust systems, should be placed on the superstructure, so as to enable them to be used at sea in all weathers. With regard to those points he would suggest the following improvements on the present system. Draughts might be avoided if inlet and outlet were placed sufficiently far apart. Such a system also tended to better ventilation by the prevention of pockets of undisturbed foul air. With regard to the system of ventilating fans, it seemed obvious that some steps must be taken to prevent the trunks from the fans being rendered useless by means of hammocks or clothes being introduced, as was frequently done. Louvres could be fitted with a padlock, by which means, when once opened, they could be locked and thus prevented from being closed, while a stout grating placed over the end of the trunk would prevent its being stopped up by introduced foreign bodies. The men's living spaces should be supplied with exhaust fans. That would tend to a much greater degree of efficiency in ventilation. If run in conjunction with the supply fans and suitably placed, they should ensure almost perfect draughtless ventilation even under the most adverse circumstances, at the same time fulfilling the requirements of a sufficiency of corresponding inlets and outlets. The openings of air trunks should indubitably all be placed on the superstructure, those on the upper deck being useless in a heavy sea as they had to be closed to prevent water washing down them, while the superstructure was practically never under water, so that air trunks opening there would be always available. There could be no doubt that the ventilation of a warship was a very difficult problem. The structure

of a warship was such that its efficiency as a fighting machine rendered all other points of secondary interest. In addition to the difficulties due to structure which had to be overcome there were others due to the character and upbringing of the ship's inhabitants. The bluejacket could not realise that the cleanliness of the air was as important as the cleanliness of the body, and having been brought up from earliest childhood in surroundings almost hermetically sealed against the entrance of fresh air, an atmosphere that was past "stuffy" seemed to him merely normal, and consequently he regarded any attempt at the admission of fresh air as an infringement of his liberties. In the face of such difficulties the present satisfactory condition of the air in modern ships reflected great credit on the officers whose duties it had been for years past to gradually evolve a system which needed but slight attention to details to be classed as almost perfect.

Mr. W. H. WHITING said that that particular problem, like so many others in ships, was difficult in itself, and was made much more difficult by special conditions of warships. Ventilation ashore in public or private dwellings had not reached a very high level.

Fleet-Surgeon ROBLEY H. BROWNE, R.N., bore testimony to the enormous improvement in modern conditions and the obvious desire of the Constructive Department of the Admiralty to deal with that question.

Fleet-Surgeon BASSETT-SMITH said that ventilation had a direct bearing on the distribution of disease.

Colonel W. CULVER JAMES, H.A.C., suggested the improvement of the supply of air, or, better still, of oxygen, by a system of chambers of compressed air or oxygen from which the gas was allowed gradually to escape when required into those parts of the vessel that were worst ventilated in time of need.

ODONTOLOGY.

FRIDAY, JULY 29TH.

President, MR. J. HOWARD MUMMERY (London).

MR. J. G. TURNER (London) contributed a paper on

The Value of Teeth to the Human Economy,

and said that many years ago his attention was drawn to this subject by an aged relative who, though toothless, ate pork crackling with relish, and lately the question had become insistent owing to the needs of large numbers of indigent patients at a big general London hospital. What was the value of teeth to the human economy under the conditions of contemporary civilisation? No one would deny their intrinsic beauty; and in his opinion complete regular dental arches (excepting the third molar), articulating within the limits of normal, were indispensable to the full beauty and nobilty of the human countenance. On this account he set a great value on the retention of temporary teeth till their due date of shedding. Early loss meant contraction of the dental arch, and sequent exclusion of a permanent tooth, unless the child could be induced to wear some form of apparatus designed to preserve the full size of the arch. Many people postulated for the temporary teeth, or, perhaps he should say, for the presence of teeth during the growing age. In idiot children such as might be seen at Darenth, whose mental development was so low that if given solid food they made no attempt at mastication but swallowed it whole and choked themselves, and who were, therefore, always spoon-fed on slops, the jaws were above the average in size. He might also say a word as to the perfect occlusion. The mandible was a loose bone with no such yoked articulation, demanding perfectly correlated growth for full performance of its function, as obtained in the case, e.g., of the ulna. It made no difference to mastication or cleanliness whether the lower teeth bit forward or backward, inward or outward, in their relation to the upper, and Nature was not over-particular on the point. Till recently the only recognised dental defect was deficiency in the numbers, and whatever ills—chiefly those in which failure of nutrition was an outstanding symptom—the physician saw fit to correct with teeth were ascribed to a deficiency in number—to loss of tooth-masticatory power. As a consequence, both in the popular and in the medical mind the idea of the almost vital importance of teeth became fixed as an axiomatic truth: teeth were for eating; they could not eat without teeth; teeth were indispensable to life—an *a priori* argument which seemed to fit in well with fact, since most people began to lose their teeth early in life. Now they had learned the importance and extent of oral sepsis, and it became imperative to inquire whether the belief in the importance of teeth might not have lost some of its old-time force. The dental profession, he found, presented two camps—one camp bewailed that the food of civilised man nowadays afforded no use for teeth; the other was continually crying "More teeth." The former camp he hoped would be with him in pushing the argument when needful to its logical conclusion. When mastication was spoken of, tooth-mastication was always meant. But there were also tongue- and gum-mastication and machine mastication. Cereal foods were finely ground, and could readily be dealt with by tongue- and gum-mastication, and meat could be cooked and minced or shredded beyond the powers of the most efficient tooth-mastication. In the presence of food, salivary and gastric reflexes were as readily and efficiently promoted by tongue- and gum-mastication as by tooth-mastication. Hence they might expect to find as a working rule that teeth were non-essential, and *de facto* the conclusion was right. In hospital practice he unhesitatingly removed from the mouths of children of any age every septic or painful tooth, leaving some edentulous, many practically so. The result was always greatly to the child's benefit. When the children were seen one or two or three years after they were always well-grown and well-nourished, and the mothers made no complaint of any difficulty in feeding them. He did the same in the case of adults, and with similar results. Patients who were slowly dying from oral sepsis returned to work in their edentulous state, and when they came back six months later asking for false teeth they were unrecognisable in their new-found vigour. Obviously they had been able to nourish themselves to the full extent of metabolic possibilities, and they acknowledged it on questioning. The only unmanageable food one labourer could think of was pickles. He cited cases to show that the state of stable nutritional equilibrium could readily be maintained in the edentulous. He dined lately with a healthy old gentleman of 80. There was a full-course dinner of fish, roast mutton, &c., of which he ate his due share. After dinner he told him that he had been edentulous for 20 years, having discarded his false teeth as impracticable. Five years ago a medical friend of his saw two sisters; the elder had a full set of teeth and was healthy, the younger had pronounced oral sepsis and was always ill. The younger had all her teeth out, but never got a false set. To-day the positions were reversed: the younger was healthy and strong, but the teeth of the elder had gone the way of all teeth, and she had a septic mouth and was the invalid. There was a point which concerned the partly edentulous which needed mention. A few teeth interdigitating rather than opposing might actually interfere with mastication rather than assist, and especially so if septic or painful, though he had been surprised to find that, e.g., the isolated lower canines he left when possible to steady a lower denture were no source of inconvenience to any hospital patients, perhaps owing to the absence of sepsis. On the insertion of false teeth tooth-mastication was restored and tender teeth relieved, but equally useful mastication would have been obtained by total extirpation. And here he would ask those physicians who differed fundamentally from him in their estimate of the value of tooth-mastication whether some such condition was not present in the cases on which they based their estimate. To test his opinion he obtained leave to visit the Brompton Hospital Sanatorium, and with Dr. Patmore examined 40 inmates, male and female, in equal numbers. Owing to the care of the dental surgeon at Brompton in dealing with sepsis, he found a considerable number practically edentulous and many with but a small amount of tooth-masticating surface. But Dr. M. S. Paterson told him he found no difficulty in feeding them, nor did the absence of teeth bear any causal relation to the incidence of indigestion. In spite of the absence of teeth the patients improved. One man in his edentulous state had reached and maintained while doing labourer's work his highest known weight; another recovered through having no teeth in his upper jaw, and had been working now for 40 years as a tailor's fitter. Nature herself made numerous experiments in the same direction. His answer to the question, What is the value of tooth-mastication? was that among civilised peoples of

to-day it was a non-essential; the edentulous could with a little care fare equally well with the fully equipped. To the question, What, then, was the value of teeth to civilised man? he answered, "Beauty." Beauty it was that was in the balance against sepsis. He had brought up this subject hoping to find others whose experience was similar to his own, and that so they might open a way out of the difficulty presented by the impossibility of supplying artificial teeth to every hospital patient who appeared to need it. The difficulty would vanish when both physician and patient realised that sepsis was the enemy, not loss, and that it needed but a little care to fare just as well in an edentulous state as with a full set of teeth.

The PRESIDENT, in reply to Mr. Turner, said that in his experience it was remarkable to find how much persons improved when they had had their teeth removed—such teeth, of course, being in a septic condition. Persons with septic mouths, and who remained in what they usually called very good health, were really living over a volcano, which might at any time become a cause of grave trouble, and the patient become subject to septic poisoning, an attack of influenza or some such lowering disease being the determining cause. He was inclined, however, to the opinion that no teeth were better than septic teeth.

Mr. HARRY BALDWIN (London) read a paper on

The Hygienic Aspect of Crowns and Banded Teeth.

He thought that a very large number of decomposing roots of teeth affected by pyorrhœa alveolaris and other septic conditions were often crowned; further, that in many cases such crowns were badly fitting and often also supported bridges in themselves badly fitting. A large number of persons were on this account disinclined to the use of crowns or bridges in any case whatsoever. But this extreme view was founded on half knowledge or half appreciation of the faults which it was desirous to avoid. The construction and fitting of the crown required considerable technical ability, and, further, also required that the matter should be looked upon from the surgical point of view. When abscesses occurred with crowned teeth it was invariably because the preliminary treatment had not been properly carried out, but as a rule a dead or pulpless tooth was more likely to remain in an aseptic condition when covered with a crown than in other circumstances, especially when the pulp canals had been rendered aseptic and properly filled. It was common, however, to see a crown with excrescences and projections at the edges which acted as a lodgment point for food which decomposed in the situation. The advantages of cap crowns and collars were that they added to the strength and stability of the crowns, that they protected the sectionised edge of the tooth from the action of saliva and caries-producing organisms, and that they greatly reduced the tendency of the root to split under the strain of mastication or by accidental violence. The collar crowns, as a rule, were not admissible if they had to be fixed far under the gum; they should, however, be fitted further than the natural free edge of the gum or just short of it; they should be fitted quite close and bevelled and properly luted with cement, and when fixed in this way there could be no possible objection to them. They were in no way as objectionable as a layer of tartar. It would be seen, therefore, that it was the abuse, and not the proper use, of crowns which was to be condemned. Hundreds of thousands of crowns, both caps and collars, were to be found in the mouths of patients who had no abscess, no gumboils, and no uncleanliness.

The PRESIDENT said that Mr. Baldwin seemed to consider that crowns possessed every virtue and no vice, but this could hardly be substantiated, particularly as it was exceedingly problematic that any crown ever fitted at all. One could probably accept a compromise and consider what was most conducive to the good of the patient in the given instance. There was no question that the majority of fixed bridges and crowns were always more or less septic.

Mr. J. LEWIN PAYNE (London) did not agree with Mr. Baldwin's statement that well-fitting artificial crowns caused no irritation. He was inclined to consider that some degree of irritation or abscesses were always present wherever there was a crown fitted near the gum.

Mr. E. B. DOWSETT (London) said that it was quite possible and well known that crowns in many instances caused inflammation, and the collection of crowns which Mr. Turner exhibited in the Museum showed that it was necessary in many cases to remove the crowns because of the septic trouble which arose, but he himself had put in a large number of banded crowns during the last few years, and thought that with great care it was possible to make such crowns fit, and that, for the slight risk of sepsis which might occur, in the majority of cases it was not legitimate to deprive the patient of an extremely useful procedure.

OPHTHALMOLOGY.

FRIDAY, JULY 29TH.

President, Mr. CHARLES HIGGENS (London).

Dr. J. S. RISIEN RUSSELL (London) opened a discussion on

The Diagnostic Values of Ophthalmoplegia, Partial and Total.

Paralysis of ocular muscles had always been regarded as one of the most reliable signs of organic disease, as opposed to functional affections of the nervous system, and he saw no reason to question the correctness of that view. A transient diplopia might suggest a functional origin, but there was much to indicate the possibility of its being organic, and an early manifestation of a grave disorder such as disseminated sclerosis. Both paralysis and spasm of muscles had to be considered; failure to do this would cause error, say, in overlooking a myotonus which was characteristic of Thomsen's disease. On the other hand, a definite paralysis was an invaluable aid in distinguishing such similar affections as neurasthenia and myasthenia; in the former it was absent, in the latter it was a recognised feature. Paralysis of the eye muscles excluded not only functional disorders, but certainly many organic disorders of the nervous system, such as subacute combined degeneration of the spinal cord, and most ordinary varieties of peripheral neuritis, in contrast to disseminated sclerosis and tabes. The importance of ocular paralysis as a diagnostic feature of intracranial tumour could not be over-estimated, yet in this connexion the rare condition of *migraine ophtalmoplégique* had to be borne in mind. The localisation of intracranial tumours was aided by consideration of the ocular paralyses. As regards the weight to be attached to the mode of onset and progress of the paralysis, he held that sudden onset did not necessarily imply a vascular lesion and contra-indicate sclerosis; experience proved the contrary. He did not think much reliance could be placed on the combination in which ocular muscles were affected as distinguishing between lesions of the nucleus and those of the nerve; he had experience of clinical symptoms pointing to central lesion which were in reality due to peripheral affection. Combinations of ocular paralyses had their value, but they must not be too rigidly insisted upon. Lastly, he urged the importance of making a thorough general examination of the patient before one was justified in making a diagnosis from what appeared to be the most conclusive ocular symptoms. Examination of the blood, of the cerebro-spinal fluid, and by means of specific tests, such as Wassermann's, were necessary correlations. Syphilis was the cause of many of these lesions, yet the fact that they improved with anti-syphilitic remedies was not certain proof for such a primary origin of the affection.

The PRESIDENT said he had always looked upon these ocular paralyses as indications of grave disease, and he was accustomed to warn patients' medical advisers to that effect; yet subsequent events did not always bear out that prognosis—at any rate, for many years.

Mr. L. VERNON CARGILL (London) took for granted the certain diagnosis of an ophthalmoplegia, and the exclusion of such functional causes as refraction, concomitancy, and hysterical disturbance. Diplopia was not always manifest; there were cases of the gravest organic disease where it was absent, such as in the conjugate paralyses of cortical and subcortical lesions, and replaced by vertigo and false or excessive projection to the paralysed side. Diplopia was also absent in cases of double ophthalmoplegia externa, the patient moved the head instead of the eyes, and they might be unaware of the defect. It very frequently happened that the ophthalmologist was the first to detect the oncoming of serious nerve disease by the discovery of pupil derangements; and in this connexion they must be prepared to undertake a thorough general examination of such patients or hand them over to neurologists. The history of the oncoming diplopia was of the greatest value in determining its importance, and although this might be complicated by symptoms that were obtrusively hysterical, that did not disprove the presence of

an organic lesion. Hysterical symptoms could usually be distinguished by their "dissociated" character, and the greater affection of direct and voluntary movements. History was of importance in distinguishing paralysis from mydriasis, mitosis, traumatism, and post-diphtheritic influences; and they had always to be on their guard against fixity of pupils from old inflammation; occasionally by such means alone a diagnosis could be made. Further, intra-ocular examinations might afford valuable help, active or "obsolescent" tubercle, or syphilitic mischief, retinal arteriosclerosis, or diabetic or renal retinitis, might be detected. The presence of papillitis, or primary optic atrophy, might shed a flood of light on the accompanying ophthalmoplegia. There might be orbital symptoms or signs of old injury. There were cases of isolated ocular paralysis, mostly of the external rectus, which appeared due to rheumatism, and there the neuritis was probably similar to Bell's paralysis. He had notes of two cases where paresis of the superior oblique was accompanied by pain of the pulley and probably indicated a fibro-synovitis. He thought rheumatic myositis or fibrositis might pick out an extra-ocular muscle and be indicated by local pain on movement, tenderness, or even slight œdema. These cases cleared up readily with suitable treatment.

Dr. E. FARQUHAR BUZZARD (London) dealt particularly with the pupil phenomena of ophthalmoplegia. The value of the Argyll Robertson pupil in the diagnosis of syphilitic disease could hardly be over-estimated, notwithstanding that a satisfactory anatomical explanation was wanting. He then dealt with the cases of two women who suffered from paroxysmal headache of great severity, vomiting, and some degree of optic neuritis, in whom pupillary symptoms were marked. There were inequality and failure of reaction to light. Post mortem there was found in each case a small cyst within the third ventricle. From these and other cases he concluded that failure of the pupillary light reflex was a valuable sign of gross disease in the third ventricle or in the structures immediately surrounding it, and that it not infrequently constituted the first localising evidence of that disease. Further, they must remember that the light reflex was only lost in actual eye disease when it passed to a full degree of optic atrophy; it persisted even in severe papillitis. In the absence of such signs failure of the light reflex indicated grave deep-seated central disease. Yet when tumour was suspected the possibility of operation was totally excluded since the lesion was too deep for eradication. Decompression might, however, be resorted to.

Dr. W. B. WARRINGTON (Liverpool) commented upon the occurrence of cases of single ocular muscle paralysis without indications of grave general disease.

Mr. N. BISHOP HARMAN (London) said he believed that there were many cases of single muscle paralysis which were due to exposure to unusual extremes of cold. He had heard no reference to them in the able papers of the neurologists, but Mr. Cargill indicated that he recognised rheumatic cases. He could only suppose that these cases did not come into the hands of the neurologist. Or were they included in the warning that Dr. Russell had given of the transient paralysis which he described as foreshadowing disseminated sclerosis? He (the speaker) instanced the case of a man who had been exposed without food throughout a whole day to a cold east wind on a motor-boat; the experience had an immediate effect upon his sense of well-being, and the succeeding day he awoke with diplopia due to paresis of one external rectus. There were no other symptoms and good evidence against syphilis. Was it not more likely that such a case was a genuine peripheral neuritis similar to Bell's paralysis rather than a precursor of grave disease? He concluded that these cases did occur, and fairly frequently. Acting upon this view he discarded anti-syphilitic measures and prescribed strychnine. In the case instanced cure was established in three weeks. To view such cases gravely and to give serious warning to the patient or his medical attendant was to court trouble.

The PRESIDENT said he doubted if these cases ever got to a neurologist; to him the diagnosis was established in that they got well speedily.

Dr. R. A. REEVE (Toronto) also concurred in the influence of exposure to cold on the causation of isolated paralysis; often he found signs of deep-seated pain.

Dr. AMY SHEPPARD (London) said she had seen similar cases and obtained evidence of tenderness in the region of the affected muscle.

Mr. A. W. ORMOND (London) questioned whether these cases really got well. The relief was only temporary. And if exposure could be credited with the occurrence, why were these cases not more frequent?

Dr. ANGUS MACGILLIVRAY (Dundee) agreed with Mr. Harman in the existence of the cases, but he found that six weeks was the usual duration. He gave a guarded prognosis until the six weeks were up. If at that time the paresis had not passed he considered the prognosis was grave and indicative of ultimate central disease. He had not found local pain in the temporary cases, but he was sure syphilis was not a necessary factor. Further, some of these cases he had watched for 20 years and more and there had been no recurrence and no subsequent grave effects.

Mr. A. HILL GRIFFITH (Manchester) asked if Dr. Russell made use of electrical reactions as an aid to diagnosis. He had seen several cases, and had had them under observation for many years, where monocular mydriasis occurred without other symptoms. To what cause could such uncomplicated stationary lesions paralyses be due?

Dr. JOHN HERN (Darlington) said he had seen many cases of paresis of an external rectus of one eye, such as Mr. Harman had described, and had watched them for 20 years afterwards and they had not recurred. It was apparently a peripheral lesion and should be treated as such where there were no other manifestations to indicate a central lesion.

Major H. A. J. GIDNEY, I.M.S., said these cases should present no difficulty if syphilis was excluded by the Wassermann reaction.

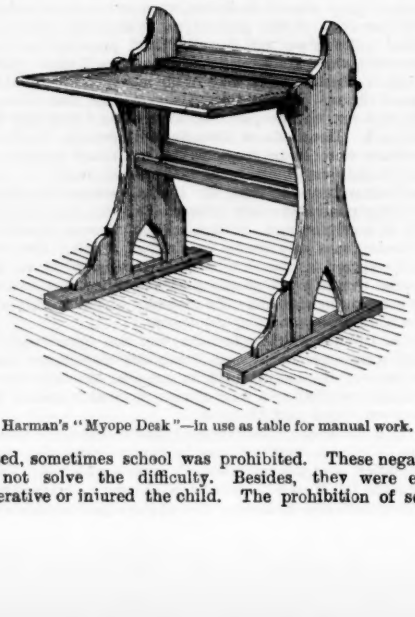
Dr. RISIEN RUSSELL, in reply, said the observations concerning the pupil reaction by Dr. Buzzard were of the highest importance. Regarding the question of the occurrence of single paralyses due to cold such as described by Mr. Harman and confirmed by so many speakers, he agreed that such cases did occur, and cited one recently seen in an engine-driver in whom cure resulted in three weeks, to his great surprise. Yet their opinion had to be determined on the general question by the subsequent history of the cases. Dr. MacGillivray and Dr. Hern had watched cases for 20 years; that was conclusive evidence. On the other hand, there were many cases of disseminated sclerosis in which history of early single and transient paralysis was obtained. The presence or absence of syphilis did not prove the point, though it had an important bearing.

Mr. BISHOP HARMAN (London) read a paper on

The Education of High Myopes.

The action of the ophthalmic surgeon in regard to these cases was one of difficulty, especially in London elementary schools with their huge number of children. It was common to give negative injunctions. Reading and writing were prohibited, sometimes school was prohibited. These negations did not solve the difficulty. Besides, they were either inoperative or injured the child. The prohibition of school

FIG. 1.



Harman's "Myope Desk"—in use as table for manual work.

was a real injury; school nowadays was a good place, where lasting advantage was gained. To stop a child who could read from reading was next to impossible. He then outlined a scheme which was being put into operation in London by the establishment of "myope classes," which he thought would go far to solve the difficulty. The curriculum in these classes was divided into three portions—oral teaching, handicraft, and literary work. The first and most important was taken in company with the normal-sighted in the ordinary school; no books were allowed; here the main part of their mental instruction was given. The other sections were carried on in special classes. Every sort of handicraft

FIG. 2.

Harman's "Myope Desk"—in use as blackboard for literary work.

that developed feeling rather than sight was practised. And, lastly, such knowledge of the ordinary means of communication, as they must know, was taught by writing free-arm fashion on blackboards. By these means they hoped to train the children in such habits as would spare their eyes undue strain. The success of the work depended upon the intelligence of the teachers. He then showed the desk furniture he had designed for use in these classes, which gave to each child its own table for manual work and a large blackboard for such writing as was taught.[1]

Major G. H. FINK, I.M.S., read a paper entitled

A Plea for Efficient Drainage after Cataract Extraction.

He favoured the use of adhesive plaster dressings after operation. These dressings were particularly useful in preventing patients handling their eyes and so damaging the opened globe. In cold weather a dry dressing was used, in hot weather a moist one. To obtain the best effects of the dressing it was necessary to secure free vent of tears or discharges, and this was obtained by inserting a thin rubber tube into the lower conjunctival sac; the ends projected from the dressing, and through them irrigation could be performed.

Major GIDNEY did not think well of the procedure. Irrigation after extraction was likely to damage the tissues and prevent healing by first intention.

Mr. BISHOP HARMAN then proposed the following resolution:—

That in view of the importance of obtaining continuity of treatment of defects of vision in school children throughout the period of education, and of proper coördination of medical inspection and treatment, it is the opinion of the Ophthalmological Section of the Association that the organisation of school clinics is desirable.

He said that the subject was being agitated in municipal circles, but they had no concern with that. They were interested in its medical aspect. As members of the Association they would not be content with any scheme of treatment required by the State that did not fairly remunerate the services of the doctor. Attempts had been made to throw the whole work on the voluntary hospitals but they failed, as these had not the necessary means of coping with such a huge mass of work. Various schemes were in process of trial. Private and public school clinics had been formed in some places. In London hospitals were subsidised in some quarters to do the work. Of the principles concerned in the London scheme he would say nothing, but the effects of the arrangements were fair comment. One effect had been that children were refused treatment at many hospitals without a school "voucher" certifying payment. The arrangement as at present worked entailed a serious loss of time and labour to the parents, and it was provocative of ill-feeling and distaste for treatment. A matter of great concern to them, from the scientific side of their work, was the means of obtaining knowledge of the causes of the defects of vision or the influences that accentuated them. This they could obtain by a properly organised scheme of clinics covering given school areas, but it was impossible when patients went haphazard to any hospital. It was only by developing this valuable side of their work that they could exert a proper influence in the prevention of disease.

Mr. WALTER EDMUNDS (London) seconded the motion. He said they ought to recognise that this question affected the great majority, for of the children of the country 86 per cent. belonged to public elementary schools, 10 per cent. to Poor-law schools and orphanages, and only 4 per cent. to private schools. Medical inspection was wasted without arrangements for treatment. This could be done by subsidising hospitals or by maintaining school clinics. He thought arrangement with hospitals unsatisfactory; the permanent staff was insufficient, so recourse was had to temporary clinical assistants who were not always experienced. Further, the practice tended to produce many clinical assistants for whom permanent work could not be found. The only alternative was school clinics.

Dr. A. HUGH THOMPSON (London) said it did not matter who did the work so long as it was properly done and properly organised. There was ample room for voluntary organisation and for public work. He detailed the work of a voluntary school clinic which he had worked in Woolwich for the past three years, and which had been a perfect success.

Dr. J. A. MENZIES (Rochdale) said that the matter had already been settled in Rochdale by the establishment of a school clinic by the education authority. The hospital did not consider it fell within the scope of its charitable work. The children who were found by the school medical inspector to require eye treatment were later seen by the ophthalmic surgeon in a convenient room and the work was done on the spot. Cases requiring operative treatment were referred to the hospital. The matter had been arranged on businesslike lines, and it was a success.

Dr. MACGILLIVRAY (Dundee) thoroughly agreed with the motion. He further commented upon the qualification required of candidates for posts of school doctors. They were expected to hold the D.P.H.; that meant they knew everything about bakeries, sewage, and Local Government Board laws, but nothing about schools or school children.

Dr. R. BEATSON HIRD (Birmingham) supported the motion. In Birmingham, he said, some of the treatment was being undertaken by the school doctors, and it did not seem satisfactory; special men were required. He then described the working of a school clinic which had been established in a small rural district. The defective children were examined on Saturdays in the schools; the parents paid for the glasses and a small sum for treatment in penny contributions. The work had been done for two years, and was an illustration of effective organisation.

Dr. HERN said that at Darlington attempt had been made to throw this work on the hospital, but the attempt had been foiled. It was not necessary that they should settle details at this time; the principle of the clinic was the point.

Mr. R. PHILIP BROOKS (London) said that before he could support such a motion he must know what a school clinic implied. He was opposed to gratuitous work of this kind, and he was also opposed to building new and expensive State hospitals for school children.

Mr. HILL GRIFFITH said that in Manchester and Salford they had an extraordinary divergence of practice. These places formed really one city, yet in Manchester the work was thrown on the charitable hospitals, and in Salford a properly paid ophthalmic surgeon had been appointed to do

[1] The desk was lent by Messrs. G. Hammer and Son, 430, Strand, London, W.C., for the occasion.

the work in the schools. The matter really rested with the governors of hospitals—they had the control.

Dr. R. HALDANE COOK (Enfield) called attention to the Association's pamphlet No. 25 on this subject. There would be found a scheme for the working of local school clinics which seemed to promise satisfaction.

Mr. CHARLES WRAY (London) said that at Croydon he did the work for the education authority. They had fitted up a room as a school clinic and it was satisfactory.

Dr. R. E. HARCOURT (Liverpool) agreed with the motion, and instanced the need of the school children in his city.

Dr. R. LESLIE RIDGE (Enfield) said that the establishment of school clinics would do much good to the prestige of the profession. It was bad to educate the general public to rely upon the hospitals for this treatment.

The PRESIDENT said there could be no doubt that proper organisation was required. He had always objected to seeing school children at hospital. The difficulty was acute in rural districts where such kind of special treatment could not be obtained. He read letters which the local authority sent out to those who failed to get the vision of their children treated. These yokels were told they were liable to a fine of £100 or to two years' imprisonment! This notice had been sent to a woman whose husband had left her, and who kept herself and three children on 12*s.* a week! The whole thing was ludicrous in such circumstances. He then put the motion to the vote, when it was carried with one dissentient, there being about 35 present.

A vote of thanks to the President of the Section concluded the proceedings.

OTOLOGY.

FRIDAY, JULY 29TH.

President, Dr. EDWARD LAW (London).

Mr. BUTLIN, P.R.C.S., President of the British Medical Association, attended and contributed to the earlier part of the proceedings.

Dr. JOBSON HORNE (London) read a paper on

Deafness and Diseases of the Ear in Relation to the Public Services and Insurance; and their Bearing upon Forensic Cases and the Choice of a Means of Earning a Livelihood.

He said that the subject covered a considerable amount of ground and was one about which there was undoubtedly room for more than one opinion—in short, it lent itself to discussion. He therefore confined himself to submitting for consideration points that at times occasioned considerable anxiety to those who had to adjudicate upon them. It was not possible to lay down hard-and-fast rules, or even general principles, for accepting or rejecting candidates in cases of deafness and ear disease, of general application to those candidates coming within the scope of the title of the paper. What would be applicable to one would not be applicable to another. For example sake, a candidate not acceptable for life insurance might be accepted for accident insurance and *vice versâ*. Whilst a third candidate might be accepted for both kinds of insurance and rejected for any public service, using the term in a comprehensive sense to include the telephone company and the indifferent waitress at the teashop. In the title of the paper the term insurance had been used to cover both life insurance and accident insurance. As regarded deafness and ear disease in relation to life insurance, there was an increasing competition amongst life offices for business, and whilst offices were always most anxious to exclude lives the acceptance of which would be an injustice to others insured, at the same time they were not desirous of turning away business. At times there had been a tendency to regard middle-ear disease a little too seriously in the matter of life insurance. In a word, the life office had to temper medical science with business purposes. The last time that this subject was discussed by the British Medical Association was in 1898 in Edinburgh at a conjoint meeting of the Sections of Laryngology and Otology, and Medicine in relation to Life Insurance. The difficulty that confronted that meeting 12 years ago and prevented it from arriving at useful conclusions confronted the meeting that day 12 years afterwards. The difficulty was this—an absolute want of reliable statistics upon which to base sound opinions. The meeting 12 years ago naturally dealt with suppurative diseases of the ear to the exclusion almost of all other forms of ear disease and of causes of deafness. They limited their subject to life insurance; they were now dealing with the subject in a much broader manner, and before he touched upon the suppurative diseases of the ear he would wish incidentally to refer to the non-suppurative varieties in connexion with life insurance. For instance, could anybody present tell him from reliable statistics what was the average length of life of a person the subject of oto-sclerosis? Further, could anyone tell him the causes of death of such subjects, and whether the causes of death had a remote bearing upon the ear disease? In the present state of their knowledge could they with confidence state that insurance without delay could be recommended in oto-sclerosis? Unfortunately, the ear had hitherto been regarded too much as an appendage distinct from the body, with the result that a knowledge of the causes of some forms of ear disease had not advanced. The suppurative diseases of the ear naturally bulked the aural problems in life offices, and he submitted for their consideration and discussion the following points. Speaking generally, persons suffering from acute inflammations of the external and middle ear would not offer themselves for life insurance until the acute stage had passed by. However, exceptions arose, and life insurance was at times a matter of urgency. Should such cases be accepted in the acute stage? Was it advisable to put off insurance in cases of chronic inflammation of the external ear? Passing to the middle ear, he thought it would be generally agreed, but even here there were two opinions, that chronic suppurative cases should not be accepted if there were inflammation in the attic or the mastoid, if there were cholesteatomata or tubercle, or any form of bone disease, or facial paralysis, or if there were associated with the middle-ear disease giddiness, headache confined to one side, or narrowing of the meatus which would prevent free escape of secretion. Apart from these, should other cases of chronic suppuration of the ear be accepted? Did a permanent perforation of the drum, without obvious discharge, call for rejection or some increase of premium? And lastly, with respect to the suppurative forms of disease, should those chronic cases of suppuration treated by radical operation be rejected or even weighted? Passing to insurance against accidents, he thought it would be generally agreed that marked deafness on both sides and vertigo should call for increased terms for acceptance, if not for rejection. The suppurative forms of disease of the ear in the matter of insurance against accidents alone, at first sight, should not stand in the way of the acceptance of the candidate. However, there appeared to be room for litigation over the meaning to be attached to the term "accident," as shown by the recent case of a widow trying to recover compensation for the loss of her husband who was deliberately shot in a railway train. In the event of a subject of disease undergoing an operation for the cure or relief of his ear disease and succumbing to the operation, should that be regarded as an accident? If so, such cases ought to be weighted for accident insurance. He would not take up time in talking platitudes about the lack of attention paid to ear disease by insurance companies, but in illustration of his point he cited a recent experience. About a fortnight previously a lady the subject of middle-ear suppuration involving the attic and antrum of some 35 years' standing, was advised to undergo a radical mastoid operation. Before acting upon the advice she consulted him, and whilst he fully agreed with her that she had been able to go through 35 years of life without the operation, and that possibly she might be able to go through another 35 years without it, at the same time he thought she had had sound advice given to her, and he advised her to submit to the operation. There was some hesitation, and in order to make his point clear to her he mentioned that her position amounted to this, that no life office would put twopence upon her life until the operation had been done. The reply was, "Oh, you are quite wrong, doctor, I have already paid two premiums." And in what office, he inquired? The office was one of the best in the kingdom. He further inquired whether she had disclosed the fact that she had been subject to ear disease for the greater part of her life, and the reply was, "Oh, yes; I mentioned that in my paper." Did they examine the ear? Oh, no! As regards the bearing of deafness and ear disease on forensic cases, this part of the discussion was obviously concerned mainly with

cases of malingering—for example sake, when an individual sought to recover compensation for alleged deafness resulting from accident. Here the ingenuity of the aural surgeon might be taxed to the utmost in detecting the low cunning of the individual. Finally, coming to the choice of a means of earning a livelihood, this part of the subject might be usefully considered under two headings—those cases in which the patient was already deaf, and those cases in which there was a family tendency to deafness. As regarded the former, the choice of the means of earning a livelihood would naturally in a great measure be decided by the degree of deafness. The most marked deafness need not be the means of preventing a person earning a livelihood; on the other hand, it might be of considerable assistance to him in doing so. He had no intention to tell stories about intentional deafness, but there was money to be made by not hearing too much. The moral of the paper was that reliable statistics were sadly needed to enable them to speak with confidence on the several matters which they had under discussion. Altogether apart from the questions before them, it would be most instructive to learn the fate of the old suppurative diseases of the ear and also of the non-suppurative. They seldom saw in hospital practice suppurative disease of the ear in advancing life, or, to put the matter more correctly, the cases that came under their notice were for the most part under 35 years of age. He gathered that that was about the age at which life insurance was more largely effected; they therefore might assume that the cases of middle-ear suppurative disease, by the time they were submitted for life insurance, had given a good deal of indication of how they intended to progress. It would be a most useful piece of work were the special hospitals in London and the provinces to coöperate in compiling collective statistics to help them to speak with authority to life insurance offices and similar bodies.

The PRESIDENT, after congratulating Dr. Jobson Horne upon having condensed in his instructive paper so much useful information into such a limited space, said that the choice of the means of earning a livelihood was a most unfortunate and difficult question. Speaking generally, he always advised parents to select for a deaf child an occupation or a profession in which the sufferer was likely to be eventually the master and not the servant. If deaf it were better to be the commanding officer than the subaltern or private, or to be the judge than the prisoner.

Dr. ALBERT A. GRAY (Glasgow) pointed out that if a dry perforation of the drum of the ear were to be considered a cause for rejection for life insurance valuable business would be turned away by the life offices. He therefore agreed with the remarks bearing upon this point which had been made by Dr. Horne. Oto-sclerosis, in his opinion, should not be a ground for rejection for insurance against accident.

Mr. P. MACLEOD YEARSLEY (London) considered that deafness was often made too much of as a ground for rejection for an insurance against accident, for one had to remember that deaf subjects were more careful than persons with good hearing in the avoidance of street accidents. In the matter of life insurance, in all suppurative disease of the ear it had always been his system to consider the life a good one when there had been no fresh suppuration for at least seven years.

Dr. W. JOBSON HORNE, in reply to Mr. Yearsley, said that he agreed generally with his remarks about insurance against accidents in cases of deafness, but there were accidents other than those occurring in the street in which deafness was conducive. As regards the chronic suppurative cases, it was a matter of common knowledge how difficult it was to obtain reliable data as to when an ear ceased to discharge or to show any signs of activity of the disease.

Mr. YEARSLEY read a paper on

The Value of Ossiculectomy in Chronic Middle-ear Suppuration.

This paper was based upon 70 operations in 65 patients, five of whom underwent the double operation. 23 were males and 42 were females, of ages ranging from 6 to 62 years. All were operated upon for chronic or recurrent discharge with a view to the possible prevention of the radical mastoid operation. The duration of discharge varied from three months to many years. The conditions found in the ear were detailed as to the site of the perforation, state of the ossicles, and the presence of granulations. The malleus was carious in 62·8 per cent., having disappeared in 6·2 per cent., the incus was diseased in 78·5 per cent., and totally destroyed in 18·1 per cent. The method of operation was described briefly, stress being laid upon the necessity for removing the outer attic wall. The results of the operation were detailed in respect of hearing, tinnitus, and discharge. Hearing was improved in 18, unaltered in 6, and made worse in 3, the result being in doubt in 40. In 2 cases tinnitus was improved. Discharge, the condition for which the operation was performed, was cured in at least 30 per cent., and improved in 42·8 per cent. It recurred in 11·4 per cent., and the operation was a failure in 13 cases (18·5 per cent.), 11 of which subsequently required the radical mastoid method. The conclusions were stated as follows: (1) that ossiculectomy offered in selected cases at least 30 per cent. of cures and 42·8 per cent. of improvements; (2) that the operation should include careful removal of the outer attic wall, especially in its posterior part; (3) that the annulus tympanicus should be curetted to prevent the possibility of a false membrane forming; and (4) that the operation was a useful alternative measure to the radical mastoid method, especially as it in no way militated against the success of the latter should the simpler procedure fail.

Dr. FREDERICK SPICER (London) had had bad results, and after his experience had come to the conclusion that the operation was an unjustifiable one in the present day.

Mr. C. E. WEST (London) considered that the limits of usefulness of the operation were very narrow. It was useless in cholesteatoma, and in all cases in infection of bone outside the ossicles and a limited area of the outer attic wall. The percentage of cures even in selected cases was enormously less than that following the radical operation in unselected cases; the damage to the hearing was at least as great as after the radical mastoid operation, and in chronic local attic suppuration the removal of the ossicles was an unnecessary destructive measure, the opening up of the attic and the antrum being sufficient and giving excellent hearing results. The hearing before the operation was above the average in most cases at all suitable for ossiculectomy. The amount of pain following these small intrameatal operations was far greater than after the larger open operations. Moreover, there was special danger attending the operation of ossiculectomy; the risks of facial paralysis and the possibilities of dislocation of the stapes were greater and were real.

Mr. T. MARK HOVELL (London) said that in his experience chronic suppuration in the tympanum was usually associated with a collection of pus or cholesteatomatous matter in the mastoid antrum and the removal of the ossicles could not put an end to the discharge.

Mr. H. J. MARRIAGE (London) did not consider the operation under discussion a satisfactory one. When chronic otorrhœa required an operation on the tympanum extensive disease of the antrum commonly existed, which could not be cleared up by the intratympanic operation. He pointed out that Mr. Yearsley's statistics showed healing in only 30 per cent. of the cases. He asked for information as regards the duration of the treatment before the operation had been carried out, and also whether the successful cases had occurred in patients who had suffered from otorrhœa for a few months or in those with a history of many years. He further inquired on how many occasions Mr. Yearsley had divided the tendon of the stapedius muscle at the time of the ossiculectomy.

The PRESIDENT considered the great disadvantage of ossiculectomy was the difficulty in selecting suitable cases. He quite agreed that it was a desirable operation if one could only hit off the right cases. 30 per cent. or even 40 per cent. of cures was not a particularly satisfactory result.

Dr. HUNTER F. TOD (London), Dr. J. STODDART BARR (Glasgow), and Mr. F. H. WESTMACOTT (Manchester) also took part in the discussion.

Mr. YEARSLEY, in reply, was sorry to find so many dissentients. Very few of his patients had been affected for less than one year. He had tried Neumann's method of injecting prior to the operation in his last two cases, and with good results so far as hæmorrhage was concerned. He divided the stapedius tendon usually after several days. He believed that tenotomy of this tendon was a very useful procedure to improve the hearing when the opposing action of the incus was lost.

Mr. MARK HOVELL read a paper entitled

Some Remarks on the Connexion between Irritation of the Mucous Membrane throughout the Body and Middle Ear Catarrh.

He reminded his listeners that the mucous membrane which lined the tympanum and Eustachian tube was continuous with that which lined the nose and its accessory cavities, and through the naso-pharynx, the pharynx, and the œsophagus was in direct communication with that which lined the stomach and the intestines, yet he was inclined to think that the vast area with which the tympanum was then connected was sometimes forgotten, and that it was not realised how an irritation in one part of the mucous membrane was communicated in a greater or lesser degree over the whole of its surface and must therefore affect the special region which had to be treated. He emphasised the importance of examining the pharynx and the naso-pharynx and of removing the enlarged posterior ends of the inferior turbinated bodies. Pelvic derangements, such as retroversion of the uterus, cervicitis, and erosion of the cervix, had to be thought of in the treatment of rebellious forms of chronic pharyngitis.

The paper was discussed by Dr. J. H. BRYAN (Washington), Dr. SPICER, Dr. JOBSON HORNE, and Dr. M. GOLDSTEIN (St. Louis).

The PRESIDENT congratulated Mr. Hovell in bringing forward some of the common phenomena of life and disease which were often either neglected or forgotten.

Dr. STODDART BARR communicated a paper on Experiments bearing upon the Practicability of Treating Meningitis (Septic and Specific) by Means of Lavage of the Cerebro-spinal Subarachnoid Spaces.

PATHOLOGY.

FRIDAY, JULY 29TH.

President, Mr. S. G. SHATTOCK (London).

Dr. T. ADDIS (Edinburgh) read a paper on

The Pathogenesis of Hereditary Hæmophilia.

He advanced the view that a deficient coagulability of the blood was the only constantly present pathological feature of the disease, and claimed that it alone was sufficient to account for the whole symptomatology of the condition. The theories of blood coagulation as given by Fuld and Morawitz, Loeb, Nolf, and Mellanby were briefly discussed. Mellanby's theory was the only one which was fully confirmed in the experiments undertaken, and was the one by which the facts observed were fully explicable. Twelve cases had been examined from six different hæmophilic stocks. Coagulation times were given, showing that the severity of the symptoms in each case was directly proportional to the degree of diminution of the coagulability of the blood. The methods employed in the investigation into the cause of the defect in coagulation were then described. 1. *Coagulation of normal and hæmophilic blood, plasma, and fibrinogen.* There was great delay in the natural coagulation of hæmophilic blood in any case in which the symptoms were marked. There was a corresponding delay in the coagulation of hæmophilic oxalated plasma and fibrinogen solution by the addition of calcium chloride. Hæmophilic blood, plasma, and fibrinogen solution coagulated quite as readily and quickly as normal blood, plasma, and fibrinogen when thrombin was added. 2. *Experiments with serum.* The effect of the addition of hæmophilic serum to normal and hæmophilic blood, plasma, and fibrinogen, and of normal serum to normal and hæmophilic blood, plasma, and fibrinogen had been determined. The cause of the defect in coagulability in hæmophilic blood was to be looked for in something which hindered the formation of thrombin. 3. *Fibrinogen.* There was no deficiency in the amount of fibrinogen in hæmophilic blood as compared with the amount in normal blood. 4. *Thrombin.* There was no quantitative or qualitative defect in hæmophilic thrombin. 5. *Anti-thrombin.* The amount of anti-thrombin had been estimated by adding small amounts of thrombin to normal and hæmophilic plasma. The minimal quantity of thrombin necessary to produce a certain amount of coagulation was the same for each plasma, and there could therefore have been no excess of anti-thrombin in hæmophilia plasma capable of explaining the delay in its coagulation. 6. *Calcium.* The effect of adding varying quantities of calcium salts to normal and hæmophilic plasma and fibrinogen was relatively the same. No quantity of calcium was found capable of reducing the coagulation time of hæmophilic plasma to the normal. If the delay in the formation of thrombin had been due to either an excess or to too small a quantity of calcium salts, this would not have been the case, and therefore this explanation was negatived. There was no evidence that the diminution of coagulability in hæmophilia was due to any deficiency in the amount of thrombokinase. The fact that thrombokinase derived from hæmophilic blood was as active as normal thrombokinase showed that there was also no qualitative change. There was no deficiency in the amount of prothrombin in hæmophilic blood. No quantitative deficiency in prothrombin could be found. The possibility of the presence of bodies inhibiting the formation of thrombin in hæmophilic blood was next considered. This possibility was excluded by the results of experiments on the effect of the addition of hæmophilic plasma to normal plasma. There was no anti-kinase present. The constituents of hæmophilic plasma, after removal by dialysis against water of the fibrinogen, prothrombin, and thrombokinase, had had no retarding effect on coagulation. Numerous experiments on the effect of heat and of acids and alkalies failed to show any distinction in the reaction of hæmophilic and normal plasma to these agencies, and the relative difference in the coagulation rate had not been affected. Dialysis against normal saline solution was also without effect. The conclusion he arrived at was that hæmophilia was due to an inherited qualitative defect in the prothrombin, whereby it was less readily activated than normal prothrombin. The rate of activation of hæmophilic prothrombin was found to be much slower than with normal prothrombin, and this was the only defect found in the hæmophilic blood. Further investigations into the nature of this defect in the prothrombin were still being carried out.

The PRESIDENT having remarked that he was sorry Dr. Addis had not drawn conclusions of what occurred *in vivo* from his experiments *in vitro*, called on

Professor SAHLI (Berne), who said that he wished to make them acquainted with his new researches on hæmophilia. He had first found that the diminution in the coagulating power was the constant character of this enigmatical disease; this statement had been confirmed by other authors. As to the cause of the phenomenon, he had found that it was the absence of thrombokinase, and that traces of normal blood or serum could, if added to hæmophilic blood, restore the power of coagulating: this had been confirmed by Moravitz. In a recent paper he had shown that the substance existing in normal blood and wanting in the hæmophilic was affected by heat as thrombokinase ought to be; and in the same paper he had also shown that the difference between normal and hæmophilic blood resided in the blood corpuscles, because normal blood corpuscles had a strong coagulating effect on hæmophilic blood, whereas hæmophilic blood corpuscles had much less. In this way he had more firmly established his theory that hæmophilia was a cellular anomaly both of the blood corpuscles and of the endothelial cells of the vessels. Nolf of Liége had independently come to a similar conclusion. He thought that hæmophilia depended upon the absence of thrombozyme in the blood corpuscles and the endothelial cells. Consequently he was sorry he could not concur with Dr. Addis.

Dr. ADDIS replied that his experiments had not shown what Professor Sahli alluded to, and he suggested that the blood corpuscles used might have been enveloped with plasma, and that *that* contained the thrombokinase. On being asked by the President if he had any proofs as to where thrombokinase was formed, he answered that he had not.

Professor SAHLI then stated that his corpuscles had been thoroughly washed in oxalate solution and afterwards in physiological saline. Accordingly the objection was not valid.

Dr. E. E. GLYNN (Liverpool) then read a paper on

Some Observations upon Fatal Cases of Primary Thrombosis in the Pulmonary Artery.

He pointed out that the fatal occlusion on the pulmonary artery by an embolus or thrombus was deeply interesting not only to the physician, the surgeon, and the obstetrician, but also to the pathologist, who was called upon to decide at

the post mortem whether the foreign bodies plugging the pulmonary artery were the result of embolism, thrombosis, or both. The majority of writers were of opinion that the plugs present were almost invariably due to embolism. Some other observers, on the other hand, held that primary thrombosis was not only common, but more common than embolism. It was a curious fact that whilst so many writers had carefully described the macroscopical appearances of clots found in the pulmonary artery, no attention whatever had been paid to their microscopical structure. This was all the more remarkable since, as was well known, the microscopical structure of a thrombus altered with age. The following were the changes produced by age in pulmonary thrombi to which the greatest importance was usually paid. 1. The erythrocytes in a recent thrombus had a very distinct outline, and stained bright red with eosin. Later their outlines disappeared, they fused together, and took a brownish tint with eosin. Later still brownish-yellow hæmosiderin pigment appeared in increasing amount as fine granular deposit, which was soon found inside the cytoplasm of the leucocytes present in the clot. Finally, the surrounding artery wall itself became pigmented, and pigment might even be found in adjacent cartilage. 2. The polymorphonuclear leucocytes which were present even in aseptic thrombi and tended to increase in numbers through emigration, retained their normal appearance and staining capacity, and were destitute of pigment at first. But soon karyorrhexis and karyolysis of the nuclei took place. The margins of the cytoplasm became indistinct, and the cell eventually disappeared. 3. Organisation was proof positive that a thrombus had been *in situ* for some time. The rapidity with which hæmosiderin occurred depended partly upon general conditions such as the presence of hæmolysin in the blood or streptococci, &c., and partly upon local cellular conditions. Although he could make no definite statement as to the exact time pigmentation took to appear, for it must vary with circumstances, it was perfectly clear that the liberation of hæmoglobin from the erythrocytes, its deposit as hæmosiderin, its entrance to the leucocytes and connective tissue from the surrounding artery, was not a question of minutes but of hours, sometimes days, and none of his patients lived more than 30 minutes after the onset of the symptoms. He then passed on to a description of the cases which had been observed by him in the post-mortem room at the Liverpool Royal Infirmary during the years 1902–1909 inclusive, and entered into a consideration of the etiology of the condition—(1) the contact of the blood with abnormal surfaces; (2) slowing and other irregularities of the circulation; and (3) bacterial infection and chemical changes in the blood. Assuming that thrombosis was slow in taking place in the pulmonary artery, how was it that no symptoms were apparently produced? The reasons seemed to be the following: 1. Gradual obliteration of several branches of the pulmonary artery by thrombosis was far less likely to produce symptoms than the sudden obliteration of a much smaller branch by an embolus. 2. The patients were resting in bed; consequently there was no tax upon their circulatory system. 3. It was not customary in surgical cases to make a systematic record of the pulse or respiration, and it was only in the last three patients that he was able to obtain any data. Here he was pleased to find that the mean of the morning and evening pulse-rate showed a definite and permanent acceleration, beginning from the seventh to the eleventh day after the operation. Thus the average pulse-rate of these patients for the three days immediately following the operation was 86, 86, and 82 respectively, compared with the average pulse-rate for three days immediately preceding death, which was 126, 96, and 106 respectively. The charts proved that this acceleration was not due to a rise in temperature. This clinical fact supported the thesis that the patients died from spontaneous thrombosis. Case 8, the only one in which the respirations were regularly recorded, showed a similar increase in the rate from 25 to 31. Of course, this may have been due to the patches of streptococcal pneumonia. It was noteworthy also that Case 6 complained of palpitation two days before death, and Case 8 evidently had an infarction five days before death. The occurrence of small infarcts in three cases in itself suggested primary thrombosis, for it was doubtful whether embolism could produce infarction in the few minutes which elapsed after the supposed impaction. The possibility of rapid and even instant death was admitted by those authors who believed in primary spontaneous thrombosis; still it was rather remarkable that patients should die so suddenly as obtained in his cases. But it must be remembered that thrombosis, when once established, probably progressed with an ever-accelerating velocity, and, as Playfair pointed out, it was only "when some sudden exertion was made, such as rising from bed or the like, calling for an increased supply of blood, which could not pass through the occluded arteries, that fatal symptoms manifested themselves." Several patients died after exertion. Dr. Box's suggestion that the acute symptoms might be due to the sudden displacement of the thrombi which had formed spontaneously in the pulmonary artery or right ventricle was a reasonable one, though in Cases 6 and 8, the only one in which loose thrombi were discovered, the patients lived about 10 and 15 minutes respectively. In conclusion, he believed that spontaneous pulmonary thrombosis was comparatively common—more common than embolism. Eight cases to one of embolism out of some 1200 post mortems was the proportion in one hospital. He believed the condition was often overlooked from neglect to open the pulmonary artery, from neglect to trace out the distribution of the clots *in situ* in properly hardened specimens, and lastly, from neglect to examine them microscopically. Even the association of pulmonary clots with others in the systemic veins did not necessarily prove that the former were embolic. Both might have arisen spontaneously and separately from similar causes. The coiling and twisting of the thrombi upon which stress was laid was in itself no proof of embolism, unless they could be unravelled, or unless sections proved that separate strands of an embolus had been glued together by encapsuling thrombosis. He believed that eddies in the blood might produce a coiled appearance in spontaneous thrombi.

Some lantern slides were then shown demonstrating (1) thrombi in the pulmonary arteries; (2) thrombi showing blood changes and pigmentation; (3) section of the walls of an artery; (4) ingestion of pigment by leucocytes; (5) canalisation of thrombus; (6) organisation of clots and invasion by fibroblasts; (7) infection with streptococci; and (8) charts showing increase in pulse-rate and respiration-rate out of proportion to the temperature.

Dr. J. F. GOODHART (London) said that, although he had seen some cases where the condition was more of the nature of a thrombosis than of an embolism, his impression was that embolism was of much commoner occurrence.

Dr. C. R. BOX (London) said that it was gratifying to find that Dr. Glynn had been able to confirm the occurrence of primary pulmonary thrombosis as a cause of sudden death. In a paper read before the Clinical Society of London, he himself had attempted to show that the suddenness of death in these cases was due to a process of embolism superadded to the pulmonary thrombosis, that portion of the clot which lay in the main pulmonary stem becoming detached from its anchorage in the heart and impacted further up near the bifurcation of the pulmonary artery; that the coiled appearance of the clot in these cases was not always due to blood eddies was borne out by the fact that in one of his own cases the impacted clot bore the impress of the pulmonary semilunar valves. Among other symptoms he mentioned pain, and pointed out that, just as in the case of the veins of the extremities and of the brain, the pain always corresponded to the region affected.

Dr. E. F. BASHFORD (London) drew attention to the light the intravenous injection of emulsions of cancer threw upon the size of the thrombi which might be present ante-mortem without evident signs of their existence. In these experiments it was necessary to inject an emulsion producing immediate signs of pulmonary embolism. In the animals which survived the emboli grew, and in the course of time might be found as thrombi blocking a large part of the pulmonary arterial system before invasion of the lung tissue took place. The same thing occurred naturally during the dissemination of cancer both in man and in animals. Therefore it seemed to him that the extensive thrombosis described by Dr. Glynn and Dr. Box was not incompatible with its ante-mortem occurrence, provided that it had developed gradually, whether it arose from embolism or spontaneously in the vessels.

Dr. GLYNN replied that he was glad to hear the remarks

which had been made, and that he thought primary thrombosis was more common than was generally believed; it was wrong to argue that peripheral thrombosis was the cause of the presence of a thrombus in the pulmonary artery; he failed to see why both could not occur simultaneously. He would like to have Dr. Addis's opinion as to the time taken by the clot to form; he was sure that it was not true that it took a few minutes only.

Dr. ADDIS thereupon stated that if a large amount of thrombokinase were present the clot could form in a few minutes, but with respect to the laminated clot described by Dr. Glynn, he thought it must have taken longer.

Dr. J. A. BRAXTON HICKS (London) next read a paper on

An Investigation of the Effects of Artificial Respiration on the Stillborn.

He said that omitting any discussion on the legal question as to whether the child was "born alive," the best evidence they had at their disposal of stating that the child lived at or about the time of birth was obtained from an examination of the lungs and intestinal tract. The lungs in a child that had respired were pink, mottled, voluminous, crepitant, and floated as a whole or when cut into small pieces. The fœtal lungs were a dull purple brown, were of small volume, non-crepitant, and sank in water. The stomach and intestines contained air and floated after respiration had occurred, whereas they sank if the fœtus had not respired. Between these two conditions of inflation and non-inflation there were certain intermediate conditions (partial atelectasis) and certain exceptions. The first exception was where the infant respired but the lungs were found in the fœtal condition post-mortem. He quoted a case of anencephalic monster and other cases in which this condition was present. The second exception was that in which respiration had not occurred, but appearance suggestive of it had been produced by artificial respiration, a condition to which this paper particularly referred. Three cases were then quoted of stillborn fœtuses on which artificial respiration was performed for one hour, 45 minutes, and 30 minutes respectively, and in which the post-mortem appearances and their response to the hydrostatic tests were in accordance with complete natural respiration. The stomachs and intestines also contained air and floated. Two other cases were then quoted, in one of which artificial respiration was performed for ten minutes and in the other not at all, the lungs of the first case being only partially inflated, those of the second case not inflated at all. Some specimens and a micro-section of the inflated lung were then shown. Though it was admitted that there was no way of distinguishing the partially naturally inflated lung (partial atelectasis) from the partially artificially inflated one, it was disputed that an artificially inflated one resembled a fully normally inflated lung. Thus it was stated that mottling was not present, that considerable force must be exercised to cause air to enter the lungs, that the air only entered the bronchi and bronchioles and not the alveoli, and therefore could be expressed by pressure, the lungs now sinking in water. Now, in the three fully inflated lungs described there was nothing, no force greater than the orthodox artificial midwifery methods were employed for inflation, and pressure did not expel the air from the lungs. The opinion therefore held was that artificially inflated lungs could, and did in certain cases, resemble those that have naturally respired, but that this depended on the length of time artificial respiration had been carried out, and that, from a consideration of the case fully inflated in half an hour and partially inflated in ten minutes, this time was about 20 minutes. If a plea that artificial respiration had been performed was put forward in a case of infanticide to account for appearances of complete respiration, the following things must therefore be proved: (1) That the parturient woman herself could perform artificial respiration (a condition hardly credible), or that someone was there who could perform artificial respiration (midwife, &c.), and who might, of course, be a party to the act of infanticide; (2) that artificial respiration had been performed for a long enough time; and (3) that no other signs of life after birth (i.e., food in stomach, cutaneous changes, &c.) were present. If all these three conditions were fulfilled (an event he considered extremely improbable in a case of true infanticide) then there was no means of saying whether the child had normally respired or whether the appearances were due to artificial inflation.

Dr. J. M. BERNSTEIN (London) said that the whole idea of these observations arose from one case where he had been requested to give an opinion as to whether the child was born alive or not. Although the signs of live-birth were present, he could not be certain that the child had lived, and had been unable to give a definite opinion to the coroner on the matter. Since then Dr. Braxton Hicks had collected some more similar cases, and he thought that such observations ought to be announced. In some specimens complete aeration had been found not to have taken place even in cases a week old.

The PRESIDENT remarked that many years ago he had been interested in the subject and had found that air, thought to be absent, could still be demonstrated by squeezing the lung under water. Had Dr. Braxton Hicks done this with his specimens?

Dr. BRAXTON HICKS replied that what the President alluded to had been done and reported, but that he himself did not wish to destroy his specimens, and therefore had not squeezed them under water.

Dr. G. W. GOODHART (London) read a communication on

Chloroform Necrosis of the Liver.

He said that in rabbits which were anæsthetised with chloroform for from 30 minutes to 2 hours marked changes, varying from fatty degeneration and necrosis of the cells at the centre of the lobules, were found in 70 per cent. of the cases. In animals which received a subcutaneous injection of 0·5 cubic centimetre, similar but more marked results were obtained. With a smaller dose, 0·2 cubic centimetre, the same change was produced in a much smaller percentage of cases. In animals which survived the smaller doses, no such change was produced by repeating the dose.

The PRESIDENT remarked that there were many interesting points in connexion with the paper. He would have liked to know what the histological appearances of the necrotic area were: What was the nature of the fatty change? Was it an infiltration or a degeneration? He thought that the matter would have been an easy one to decide upon, since an increase or diminution in size of the whole organ could have been observed without difficulty.

Dr. J. F. GOODHART said that since it had been mentioned that the changes were confined to the neighbourhood of the central vein he would like to ask if they partook at all of the condition of the nutmeg liver.

Dr. GLYNN asked if the pathological changes resembled those which were met with in the human being?

Dr. BASHFORD remarked that Dr. Goodhart had touched upon only a small part of what was really a much larger subject. He wanted to know if changes had been noted in other tissues. He mentioned similar experiments which had been carried out with ether, where changes had been observed in the kidneys as well as in the liver.

Dr. GOODHART replied that the fatty change was of the nature of an infiltration; the appearance of the big liver might be like that of a nutmeg liver, but that in the acute cases there had been no evidence of pressure atrophy. He admitted that he had only touched a fringe of the subject; he had not worked with ether, which had been reported as not producing any change in the liver. In some of his cases there had been fatty changes in the kidneys and in a very few the heart had been similarly affected.

Dr. R. A. CHISHOLM (London) read a paper on

The Blood in Malignant Disease.

He said that the object of the research which formed the subject of this preliminary communication was to discover the effect produced on the oxygen capacity and volume of the blood in rats by the presence of an implanted sarcomatous tumour. The estimations were made by Welcker's method. Tabulated results were shown on the screen, and the conclusions drawn from the experiments were that the volume of the blood may be increased and the oxygen capacity decreased in the tumour rats as compared with normal rats.

Dr. A. E. BOYCOTT (London) remarked that one interesting point was the reaction of the hæmoglobin-forming tissues to the growth of the tumour. There were reasons to expect that they would object to its presence. As a matter of fact, the results were indeterminate. Thus the rats were found to have too little or too much hæmoglobin according as the

tumour were considered as forming part of them or not. This showed the fallacy of estimating the amount of hæmoglobin in the circulation in certain conditions, as in chlorosis, for instance.

Dr. C. PRICE-JONES (London) read a paper on

Alterations in the Size of the Red Blood Corpuscles,

and gave a description of the methods for estimating variations of measurement in the diameter of red cells. He further gave an account of the relation which existed between the diameter of red cells, the high colour index, and the formation of metrocytes in the bone marrow as shown by observations on the effects of hæmorrhage and of the subcutaneous administration of phenylhydrazine on rabbits.

Dr. H. BECKTON (London) next showed a most interesting series of lantern slides to demonstrate that Alltman's granules (fuchsinophile granules) were present in normal cells, in inflammatory conditions, and in the cells of innocent new growths, but that they were absent in the cells of malignant growths. In the case of mouse tumours also it was found that the majority had no granules. He emphasised the fact that the presence or absence of granules was a point of practical importance when it was a question of diagnosis as between sarcoma and an inflammatory condition, for instance.

Mr. GORDON R. WARD (London) read a paper on

Polychromasia and the Pathology of Hæmatoma.

He said that in one of the most recent text-books on diseases of the blood the following statement could be found: "If blood, the erythrocytes of which are free from polychromasia, be defibrinated and kept in a sterile tube for four or five days and then re-examined, polychromasia will be found in many cells." He was not concerned with disputing this statement, but with criticising the experiment upon which it was based and the deduction drawn therefrom—viz., that polychromasia is a change degenerative in nature. Defibrination is so gross a tampering with a tissue of such peculiar delicacy that it was impossible to disregard its influence. It was therefore basing argument on false analogy to deduce the degenerative nature of *intra vitam* polychromasia from a consideration of changes produced by so damaging a process. When it was considered that in addition to this the blood was kept *in vitro* for some days, the invalidation of the deduction quoted was only too plain. What did the experiment prove? Only that if red blood corpuscles were kept for some days under conditions likely to prove prejudicial to vitality some of them would show an alteration of chemical constitution which might be demonstrated as "polychromasia." They were thus bound to observe that this change could not depend only on the surroundings, for these were the same for all the corpuscles, while only some became polychromatophile. Where, then, lay the deciding factor? Presumably in the corpuscles themselves; no other explanation appeared possible. The conclusion, therefore, was that some of these corpuscles were potentially polychromatophile even before being subjected to experiment, or, to put it another way, that even in normal blood polychromasia might be demonstrated under suitable conditions. There was nothing, however, to suggest that the essential biochemical difference so demonstrated was in the nature of a degeneration. With such considerations in his mind he had examined the blood in hæmatomata following accidental and surgical injuries. In these the blood had been removed from the circulation but not from the body; the living test-tube experiment which was dealt with in text-books of physiology offered a close analogy, and, as in this case, the blood was found not to be clotted. Corpuscles under these conditions would naturally be deprived of the opportunity of exercising their normal functions—they would undergo changes from disease, atrophy, and finally death. As the conditions were the same for all corpuscles, changes affecting all were looked for. But again, polychromasia, when present, affected only a few corpuscles. The inference drawn, therefore, was that neither under the conditions of the first experiment nor of the more natural ones of the second did the death of a corpuscle *per se* lead to a polychromatic reaction. Did the reaction depend on the age of the corpuscle? Apparently not, since it was not found in fresh-drawn normal blood. It might be argued that cells about to become polychromatophile were removed from the circulation, but it was known that this did not take place even when blood destruction was at its greatest—as in pernicious anæmia. If, on the other hand, polychromasia was due to the youth of a cell, it ought to be found in normal bone marrow, which was not the case. The fact that it was found in the young of certain animals was much more easily explained by supposing a congenital variation as its origin. The full development of the adult hæmopoietic organs was not reached at the moment of birth; what more natural than that signs of a slightly differing activity should be found in the young. Polychromasia was potentially present in normal blood, and might be demonstrated if the blood were first treated in a particular way—e.g., by defibrination, &c., as in the first experiment, or by deprivation of normal surroundings, as in the second. It was noteworthy that the more unnatural conditions always rendered it demonstrable, the natural only occasionally, usually after 10 or 12 days. In pathological conditions the potentiality was increased as the erythroblastic activity reverted to a more primitive type—e.g., in regeneration; or, in other cases, those conditions—e.g., of toxæmia—acted, as did the defibrination, by rendering it more easily demonstrable. Polychromasia should be interpreted accordingly. To sum up, he suggested as a working hypothesis that even in normal blood the corpuscles, as they showed differences in size, in hæmoglobin content, in isotonicity, showed another difference known as polychromasia; that this difference might be aggravated by conditions inimical to normal hæmogenesis, and might be rendered more easily demonstrable when the corpuscles were subjected to unnatural conditions. The further suggestion was made that normal adult hæmogenesis produced this difference in a mimimal degree, so that the incidence of other factors was necessary to its demonstration, and that it was to be expected in the blood stream in demonstrable degree when the marrow was of primitive type either by reversion or lack of development. If this hypothesis were employed, considerations of the significance of polychromasia from a clinical point of view should be much simplified. As regarded the changes noted in all corpuscles in hæmatoma they were as follows: (1) The blood was fluid, sometimes viscid, never coagulated; (2) on standing the corpuscles separated out; (3) rouleaux formation was absent or very defective; (4) the leucocytes showed fragmentation of the nucleus—in some cases they were increased and in some were engulfing red corpuscles; (5) crenation was absent; (6) fragmentation was not present, but was very easily produced; (7) loss of elasticity was most pronounced, and for this reason the examination of spread slides was only possible if the hæmatomata were opened early; (8) hæmoglobinæmia was absent; (9) the intensity of staining reaction as contrasted with normal blood was impaired; and (10) these changes were apt to be accentuated in the older cases. He hoped at a later day that he would have the opportunity of examining a large number of cases and of making a more detailed and comprehensive report on them.

Dr. BOYCOTT said that he wished to protest against the statement quoted by Mr. Ward from the latest text-book on the subject. He believed it was an acknowledged fact that polychromasia only occurred in the process of regeneration of the bone marrow.

Mr. WARD replied that he thought regeneration might be a primitive condition. In toxic condition one might get a regeneration, but that did not alter the fact that the change was not a degeneration.

Dr. BOYCOTT read a paper on

Experiments on Soap Anæmia.

He stated that since the discovery of ether-soluble hæmolysins in bothriocephalus some importance had been attached to oleic acid and its soaps in the causation of the anæmias associated with bothriocephalus and ankylostoma and of idiopathic pernicious anæmia. In particular, Faust had described how animals might be made anæmic by the administration of these substances. Rabbits inoculated subcutaneously repeatedly with sodium or potassium oleate were found to have less than the normal amount of hæmoglobin as determined by Welcker's method. They showed, however, no signs of active blood regeneration and there was no evidence of excessive blood destruction; the anæmia, therefore, was, at any rate in part, due to deficient formation rather than to excessive destruction. Rabbits and rats fed on oleic acid showed no loss of total hæmoglobin.

PHARMACOLOGY AND THERAPEUTICS.

FRIDAY, JULY 29TH.

President, Professor A. R. CUSHNY (London).

Dr. H. H. DALE (London) read a paper on

The Active Principles of Ergot.

Recounting the history of our knowledge of the drug, he said that later work had led us away from the sound observations of earlier workers. Thirty years ago Buchheim stated that the active principle of the drug belonged to the class of septic or putrid substances, while almost at the same time Tauret isolated an alkaloid in crystalline form, and a second in amorphous form, which he regarded as a physical modification. He (the speaker) and his colleagues found that the active principles were two: (1) the specific alkaloid ergotoxin, corresponding nearly to the "amorphous ergotinin" of Tauret, to which the characteristic gangrene and other toxic symptoms of ergot were due; (2) the amines, which also arose during putrefaction and which were produced by the splitting off of CO_2 from tyrosine or from histidine. He pointed out that careful clinical observation and experiment were necessary to decide whether the specific therapeutic effects were due to the alkaloid ergotoxin or the amines from the amino-acids, and in the latter case to determine which was the important one. If ergotoxin played a necessary part in the desired effect, then ergot alone could give us what was wanted. If the amines alone sufficed, then ergot had no place in the Pharmacopœia, for these bases could be more readily obtained from other sources.

Professor HANS MEYER (Vienna) reported some recent important observations upon

The Action of Calcium

carried out in his laboratory. The assumption that oxalic acid poisoning was due to the withdrawal of calcium from the body had recently been proved by Dr. Januschke. Both the cardiac depression and the general toxic symptoms of oxalate poisoning could be relieved by the administration of calcium, or of its physiological equivalent strontium, but not of barium. Many of the symptoms of oxalate poisoning would appear to be due to an increased irritability of the sympathetic nervous system and of the organs supplied thereby—for example, the dilator of the pupil, the submaxillary gland, the arteries, and the inhibitory mechanism of the bladder. The autonomous system was similarly affected and the cardiac vagus and chorda tympani responded to a small fraction of the usual dose of pilocarpine. The administration of calcium did away with this hyperirritability. Animals to whom calcium had been given did not give such inflammatory exudates in response to stimulation as normally occurred. Thus the usual pleural or pericardial exudates which resulted in guinea-pigs poisoned with diphtheria toxin or dogs poisoned with iodine or thiosinamin did not occur. This he attributed to a change in the vessel wall. He could not account for it by any mere increase in the coagulability.

Professor P. G. UNNA (Hamburg) read a paper entitled

New Facts concerning Chrysarobin.

He pointed out that it had long been known that in certain parts of the body the oxidation of chrysarobin took place strongly, in others the change was slow and weak, and he recounted experiments carried out by him which showed that the action of the remedy was not due, as had been widely held, to its oxidation to chrysophanic acid. Yet it was certain that some change in the substance chrysarobin must take place else we should fail to account for the remarkable variations in its efficacy as a treatment of psoriasis in different localities of the body. Nor would the process of oxidation of the substance alone account for the difference. There remained the third possibility that the final product of oxidation was the active substance. This active substance was not chrysophanic acid but a substance, oxychrysarobin, hitherto undescribed. The change was brought about by the presence in certain parts of the skin of oleic acid. A totally different substance was formed by the oxidation of chrysarobin in the presence of alkalies. The indication for treatment was to convert the chrysarobin into oxychrysarobin by the combination of chrysarobin and oleates of lead. After a year's experience of the treatment he was able to recommend it as an especially quick and thorough treatment of psoriasis.

Dr. J. H. FORTESCUE-BRICKDALE (Bristol) read a paper upon

The Comparative Therapeutic Values of the Organic and Inorganic Compounds of Certain Elementary Bodies,

and mentioned the halogen elements iodine and bromine, arsenic, phosphorus, and iron. In the case of the iodides and bromides, he showed tables in which was calculated the amount of the halogen given in the daily dose of many of the new organic compounds and compared with that of the potassium salt. With few exceptions the amount was very much smaller. The organic halogen compounds were only non-toxic because of the small amount of the element which they yielded to the organism. In the action of atoxyl on trypanosomes, on the other hand, a new pharmaco-dynamic process was involved, and the organically combined element had a value which differed materially from that of the simple inorganic anhydride. No similar advantage, however, could be claimed for it in the treatment of syphilis, chorea, or severe anæmia. In these cases its action is confined to the splitting off of inorganic arsenic. The absorption of iron probably always took place in an ionised or partly ionised condition. All iron compounds in the stomach were converted into a loosely combined albuminous compound. It was only in their irritant action on the gastric and intestinal mucosa that the inorganic salts were at any real disadvantage. Some, though not all, of the inorganic salts were possessed of a harmful astringency.

Mr. NINIAN BRUCE (Edinburgh) read a paper upon the Action of Local Irritants, in which he analysed the part played by the nervous system.

Professor FAUST (Würzburg) described the production of experimental anæmia with special reference to the probable rôle of oleic acid in the pathogenesis of bothriocephalus anæmia.

Mr. P. P. LAIDLAW (London) showed tracings illustrating the Action of Cotarnine and Hydrastine; Professor W. E. DIXON (Cambridge) read a note upon the Action of South African Boxwood; Dr. H. CRICHTON MILLER (San Remo) described the combined method of the Treatment of Morphomania; and Mr. A. J. MATHISON (London) read a note upon the Treatment of Lobar Pneumonia.

PHYSIOLOGY.

FRIDAY, JULY 29TH.

President, Professor WILLIAM H. THOMPSON (Dublin).

A discussion of much interest took place regarding

The Mechanism of the Gaseous Interchange between the Air in the Lungs and the Blood.

Dr. AUGUST KROGH (Copenhagen), who spoke in English, gave a full account of his aerotonometers for the determinations of the tensions of gases in blood and other liquids. He demonstrated the apparatus, the principle of which consists in allowing a jet of blood to play upon a bubble of alveolar air of known composition. The bubble is then drawn up in the capillary graduated tube of the aerotonometer and analysed, whence the tension of any given gas in the blood can be deduced. By means of this exact method Dr. Krogh has obtained results which enable a more positive opinion to be given on the much disputed point regarding the power of the pulmonary epithelium to actively secrete oxygen into the venous blood, as the experiments of both Bohr and Haldane rendered probable. Dr. Krogh drew attention to his published curves of the tensions of oxygen and CO_2 in alveolar air and in pulmonary blood, and emphasised the point that the process of gas exchange in the lungs could be fully accounted for by the theory of simple physical diffusion. Moreover, he considered the single sheet of alveolar epithelium, on mere morphological grounds, to be unadapted for actively pushing the oxygen through into the blood.

The PRESIDENT said he wished to express the thanks of the members to Dr. Krogh for coming all the way from Copenhagen to enlighten them on the subject which his researches had done so much to elucidate.

Dr. J. S. HALDANE (Oxford) spoke of the great interest with which Dr. Krogh's investigations, which were models of what such experiments should be and had been carried out with very perfect methods, had been followed in this country. His own conclusions were on the whole at variance with those of Dr. Krogh, so that he came as a somewhat hostile critic, not from any want of admiration, but from conviction. His own later results obtained by the CO-method of Haldane and Lorrain Smith, which he had

used from the beginning throughout his investigations, had convinced him that *normally* the processes were such as could be explained by the laws of the physical diffusion of gases. Thus far he entirely agreed with Dr. Krogh. When, however, a *physiological stimulus* was applied—e.g., whenever there was urgent need of oxygen, Dr. Haldane found evidence of secretory activity.

Professor E. H. STARLING (London) strongly supported Dr. Krogh's views and criticised Dr. Haldane's ideas on the part played by a physiological stimulus, attributing the adjustment rather to the wonderful sensitiveness of the respiratory centre, on which Dr. Haldane had done so much work. He maintained that it was an abnormal condition of things when one-half to two-thirds of the oxygen of the blood was displaced by CO, as in Dr. Haldane's experiments, and that it could not be termed a "physiological stimulus."

Dr. HALDANE, in reply, said that the earlier conclusions from observations made in conjunction with Professor Lorrain Smith had been calculated on the basis of Hüfner's curve of dissociation of oxyhæmoglobin, which was now known to be inaccurate. With regard to Professor Starling's contention that man had not been evolved to deal with CO, he quite agreed that it was an artificial stimulus, but he thought a very valuable one, since it produced want of oxygen in the blood. He believed the same stimulus came into play with all muscular work. He compared the lung epithelium to that of the kidney, which could be affected by stimuli, causing diuresis, and said that it seemed almost impossible to come to a definite conclusion about a matter of such great importance and interest except by an extended written criticism.

Dr. G. A. BUCKMASTER (London) considered the high values found by Dr. Haldane and Professor Lorrain Smith, which gave an average figure no less than ten times that which was commonly accepted for the tension of oxygen in arterial blood, were so much in excess of determinations made with aerotonometers, that it would be better to suspend an opinion as to whether the pulmonary epithelium could actively secrete oxygen into the blood from the alveolar air. The power possessed by animals of adapting themselves to diminished oxygen tensions at high levels of 14,000 or 16,000 feet might in part be explained, not by the mechanism of secretion alone but by the actual increase in the hæmoglobin content of the blood. The values he obtained with Dr. C. Slater and Mr. C. T. Dent during a five days' stay on Mont Blanc 15 years ago showed that the increase of pigment would augment the percentage of oxygen capacity of a volume of blood from 17·8 to 22·5.

Dr. KROGH, in replying, said that he had used every possible method which might obviate errors. The metabolic processes in the blood itself, involving the consumption of from 10 to 50 cubic centimetres of oxygen per kilogramme an hour, which he had observed to take place in the arterial blood of rabbits at body temperature, did not take place with sufficient intensity to affect appreciably the determinations of CO_2 and O_2 tensions by means of his tonometers; he obtained identical results by simultaneously employing two microtonometers which the blood reached at different rates. Moreover, he found that just as the affinity of the blood of different animals for oxygen varied, so it did for carbon monoxide, and the hæmoglobin of different animals did not necessarily possess the same relative affinity for oxygen and carbon monoxide. He thought, therefore, that too much faith should not be placed in these colorimetric determinations of the oxygen capacity of the blood, based on the assumption that it followed the same laws inside the body as it did in shed blood. Dr. Krogh had proved that it did not. Just as Dr. Haldane had shown that the affinity of blood for carbon monoxide might vary from one individual to another, so Dr. Krogh though it might vary in the same individual from time to time. He considered that experiments should be carried out simultaneously by the carbon monoxide method of Haldane and Smith and his own tonometric method before the uncertainty now existing could be cleared up. Calculations based on the data of his experiments supported abundantly his contention that the mechanism of gaseous interchange between the alveoli and the blood was a purely physical one.

Dr. M. ROSS TAYLOR (Glasgow) then read a paper on

The Excretion of Creatin in Diabetes,

and discussed the possible factors concerned in the increased creatin output which he had observed to be associated with this disease.

Dr. C. G. DOUGLAS (Oxford) communicated the results of his work on

The Artificial Production of Cheyne-Stokes Breathing and the Factors which Cause its Occurrence.

He showed tracings obtained with Mackenzie's polygraph at different sea levels. By breathing forcibly for one minute true apnœa was induced, followed by periods of Cheyne-Stokes breathing. At normal altitudes these periods did not exceed 7-8 in number. This type of breathing could be accounted for by supposing that the forced breathing washed out the CO_2 from the lungs inducing apnœa. The oxygen tension falling gradually, he showed by plotted curves how a point would be reached at which sufficient lactic acid would be produced, due to lack of oxygen, to act as a stimulus to the respiratory centre, the CO_2 tension remaining still too low to act as an excitant. With every breath the O_2 tension would rush up and the CO_2 tension would gradually creep up until the breathing became normal. At high altitudes the same experiments were made in presence of a diminished oxygen tension, and it was found that the CO_2 not being able to rise, practically permanent periodic Cheyne-Stokes breathing occurred—42 periods occurring at 11,000 feet. An opportunity was thus obtained for a full study of the gases in the alveolar air, and they were apparently such as to account for the periodicity. Dr. Douglas then gave a demonstration on himself of Cheyne-Stokes respiration by breathing through a long tube, a good method for obtaining a large number of periods.

Dr. F. W. EDRIDGE-GREEN (London) described in detail a large number of subjective and entoptic phenomena connected with

Visual Sensations arising from Excitation of the Yellow Spot.

He drew attention to the various appearances in the field of vision due to peculiarities of the macula and fovea centralis and in particular to certain currents which may be seen entoptically that cannot be due to the circulation in the blood-vessels of the retina. These currents may be observed by a variety of methods, such as looking through yellow-green glasses when the eye is somewhat fatigued, or by looking at a rotating disc composed of black and white sectors and noting the moment when a fine flicker picture is most marked; the field of vision then becomes dark red, in which a number of interlacing currents directed from the periphery to the centre appear. Any interpretation of these whirling currents, which were seen by Helmholtz when repeating some earlier experiments made by Vierordt with intermittent light, the speaker considered presented the greatest difficulties on any hypothesis hitherto advanced, but were easily intelligible on his own theory of vision. These whirling currents are due to an altered distribution of visual purple or rhodopsin in the perceptive rod and cone layer of the retina. He regarded the cones as the only percipient retinal structures. The rods, on the other hand, were only concerned with the secretion and distribution of the visual purple, which was diffused from these into the layer of liquid surrounding the outer segments of the cones. Light then decomposed the visual purple, which was photo-chemically sensitive, and the decomposition-products stimulating the cones thereby set up a visual impulse. The whirling currents, which could be demonstrated entoptically, were in reality currents of visual purple flowing into the external fovea of the yellow spot.

Dr. EDRIDGE-GREEN also gave a demonstration of his

Spectrometer for mapping out Colour Sensations,

an instrument which gives pure colours the exact wavelengths of which can be directly ascertained. Tested with this apparatus the range of colour perception of any given individual is much more readily determined than with Holmgren's coloured wools. Individuals examined may vary in either direction from the normal hexachromic type where six colour patches of the visible spectrum are recognised.

PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

FRIDAY, JULY 29TH.

President, Dr. THEOPHILUS B. HYSLOP (London).

Dr. R. BÁRÁNY (Vienna) read a paper on

The Vestibular Apparatus and the Cerebellum.

He gave a demonstration of two methods of examination relating to the diagnosis of cerebellar diseases which he had

lately described. The first investigated the equilibrium of the body, the second pertained to the pointing movements of the extremities during vestibular irritation. He distinguished between spontaneous disturbance of equilibrium and disturbance of equilibrium experimentally produced. The tests were made in a similar manner to Romberg's test, with eyes closed and feet placed together. He had detected the following law in this connexion. If a man had by reason of any disease of the labyrinth a strong rotary nystagmus to the right, in assuming the position for Romberg's test he would fall to the left; this meant that he would fall in the plane of the nystagmus. If while maintaining the same position the head was turned 90° to the left, the patient fell backward; if the head were turned 90° to the right he fell forward. The experimental disturbance of equilibrium could be produced in every normal individual by eliciting a vestibular nystagmus through turning, or syringing an ear. By turning ten times to the left with the head bent 90° forward, or by syringing the left ear with cold water, the patient being in Romberg's position, rotary nystagmus to the right was produced. In cerebellar disease he had found that there was no connexion between any existent spontaneous nystagmus and the direction of falling. The patient with a nystagmus to the right fell also to the right, whilst the influence of the position of the head upon the direction of the fall was absent. He had latterly tested the experimental nystagmus and its influence upon the act of falling in a number of cerebellar cases. He found that syringing the left ear with cold water produced nystagmus to the right, but nevertheless the patient fell forward and not to the left. Turning the head 90° to the left did not make him fall backward, but he still fell forward. By this means he had lately diagnosed a tumour of the vermis of the cerebellum, which was verified post mortem. He offered as an explanation the possibility of the fibres of the cerebellar lateral tract and the fibres of the vestibular nerve being connected in the cortex of the cerebellum, as illustrated by Cajal. In the "pointing experiments" the patient closed his eyes and stretched out his arm to touch with the forefinger an object held in front of him; the hand was then withdrawn and the patient was asked to point again. If a normal individual was turned ten times to the right a vestibular nystagmus to the left occurred, and he would now have a tendency to point to the right of the examiner's object. This was probably due to a vestibular innervation of the arm muscles; it must arise from the cortex of the cerebellar hemispheres, and he related two cases of cerebellar abscess in support of this hypothesis. He found that turning had no effect on a patient in pointing with closed eyes to the tip of his nose. No fault was made, which was, he thought, due to the effect of the vestibular innervation being corrected by the cerebral cortex, and that the path of connexion might be the brachium conjunctivum, which travelled from the cerebellar cortex through the red nucleus to the cerebral cortex. This supposition was borne out by a clinical case of hemiathetosis, where the brachium conjunctivum was regarded as interrupted, and which caused the patient to make the same faults in pointing to his nose as to the examiner's object.

Dr. ALEXANDER BRUCE (Edinburgh) said that Dr. Bárány's investigations had given otologists and neurologists a new basis for diagnosis, and the tests described by him might be usefully applied to the nystagmus of disseminated sclerosis, which was frequently the first indication of the disease.

Dr. A. S. BARNES (Birmingham) instanced a case of cerebral (posterior parietal) tumour with symptoms characteristic of lateral cerebellar tumour as showing the necessity for the adoption of fresh tests to indicate the position of disease in conditions where equilibration was disturbed.

The PRESIDENT said that he had seen many cases of giddiness, nystagmus, and loss of coördination which might have pointed to vestibular or cerebellar disease, but had proved to be due to cortical irritative lesions or implications of cranial nerves at the base of the brain.

Dr. D. G. THOMSON (Norwich) read a paper on

A Post-graduate Curriculum and Diploma in Psychological Medicine.

He urged that the time had come for the establishment of a curriculum and a diploma for this special department of medical practice, which should receive recognition by the various universities and other qualifying bodies. The subject had already been discussed in a paper read by him before the Medico-Psychological Association in May, 1908, and had met with a cordial reception. It was remarkable that while various special branches of medicine had such curricula and diplomas there were none for psychiatry, although some of the qualifying bodies included mental diseases among the subjects of examination. For instance, the Universities of London and Durham permitted the holders of their M.B. degree to proceed to the doctorate in psychological medicine; the University of Edinburgh and some other universities made attendance on a course of lectures in that subject compulsory for the M.B. degree; and the Medico-Psychological Association had instituted an examination and certificate in psychological medicine. This did not, however, suffice for a young medical man who wished to equip himself with the problems of the pathology and treatment of mental disease and make it his life's work. With the constantly increasing number and extent of subjects demanded of the medical student it was impossible for him to obtain more than a *résumé* of a special subject until after he was qualified. Teaching authorities had already recognised this as regards public health and other specialties; in the first-named the law even demanded it and therefore post-graduate curricula in public health and in tropical medicine were provided at the medical schools. But under present conditions a young graduate entering on the treatment of insanity, the most difficult of all the specialties, received his appointment without proper training. Great progress had been, and was being, made in asylums both in scientific research and in medical treatment, but much more ought to be done by asylum medical officers in the practical application of the new sciences of bacteriology, hæmatology, and biochemistry. It might be said that the difficulty in obtaining assistant medical officers was already sufficiently great, but in his opinion the adoption of the proposals now made might even lead to an increase in the supply of candidates. Committees of visitors might fear the increase of expense which research work and an increased medical staff would involve, but they should be educated to an appreciation of the advantages which the patients would derive from the improved system. The desirability of a post-graduate curriculum and diploma had been before the educational committee of the Medico-Psychological Association, and its subcommittee had reported strongly recommending the same. This was approved by the Association, and the President was authorised to send a letter on the subject to the universities and medical schools of Great Britain and Ireland. It was suggested that one year should be the period for post-graduate study, and that provisionally the subjects of instruction should be divided into compulsory and optional—the compulsory subjects to include (1) anatomy, physiology and pathology of the nervous system; (2) psychology, normal and morbid; (3) clinical pathology; (4) clinical neurology; and (5) psychiatry, systematic, clinical, and medico-legal. For the optional subjects, only one of which was to be required, experimental psychology, bio-chemistry, bacteriology, comparative anatomy and physiology of the nervous system, and eugenics were suggested. To this letter a gratifying response had already been received. The Faculty of Medicine of the University of Edinburgh and of the Victoria University, Manchester, had recommended their respective Senates to adopt the recommendations, and regulations for a curriculum and diploma in psychiatry had been approved, whilst the Universities of Cambridge and Durham had nearly completed their arrangements. He then proposed a resolution to the effect that the meeting strongly approved of and recommended the institution of a post-graduate course or curriculum and a diploma in psychiatry, and further, that this resolution be brought before the Council of the British Medical Association.—This was seconded by Mr. JAMES STEWART (London) and carried unanimously.

Dr. R. H. COLE (London) spoke of the state of post-graduate study as it existed at present in this special branch of medicine in London. Occasional lectures were delivered and clinical demonstrations were given, but no definite course comprising the whole ground of psychiatry was available for the qualified medical man. He had to visit different asylums, hospitals, and laboratories to obtain his knowledge. The certificate of the Medico-Psychological Association had not carried the weight that it deserved in the competition for an appointment. He considered that a university diploma, involving a recognised course of study, would lead to far-reaching beneficial results both as regards the better training of the asylum medical officer and the more scientific treatment of the insane.

Dr. E. S. PASMORE (Croydon) referred to the want of knowledge of the subject of insanity generally exhibited by the average medical practitioner. With regard to the proposed post-graduate course and diploma, he doubted the wisdom of insisting on so much neurology and cognate sciences. He had lately recommended the appointment of a pathological chemist to the asylum of which he was superintendent. The statutory work demanded from asylum medical officers encroached so much on their time as to interfere with research work.

Mr. H. G. SHORE (London) referred to the fact that general practitioners saw melancholics in the early stages and did not sufficiently realise their potential suicidal tendencies.

Dr. T. SEYMOUR TUKE (Chiswick), after expressing approval of the proposals embodied in the paper, said that in his opinion the insane did not benefit by the existing conditions whereby knowledge of neurology seemed in some instances preferred to that of actual clinical mental disorders. The two subjects should go hand in hand and be required of everyone having the care of the insane or being consulted by others on their behalf. He hoped that in the examinations for the proposed diploma the preponderance of psychology and neurology was more apparent than real, for a thorough knowledge of mental diseases by the candidate was essential.

The PRESIDENT criticised the attitude of the University of London, which originally made mental physiology compulsory in its higher degrees and had now varied the subject and made it optional. He also deprecated the action of the London County Council in the apathy it had displayed in shelving the matter of the Maudsley Bequest for the establishment of a mental hospital with a psychiatric school to be attached thereto. It was the duty of the profession to make this need for instruction felt in the interests of the insane which might lead to action by the governing bodies concerned.

Dr. BRUCE showed a series of lantern slides illustrating a case of

Multiple Neuromata of the Spinal Cord.

In this case a sclerosis of the adventitia of the vessels of the spinal cord was associated with multiple (amputation) neuromata in the substance of the cord. The specimens were obtained from a patient who had been in the Longmore Hospital for Incurables, Edinburgh, and had died at the age of 30 years. Her illness had commenced apparently about the age of 7 years, with "water in the head." About the age of 10 years weakness of the lower extremities began to develop, followed by muscular wasting and loss of the knee-jerks. The weakness gradually extended upwards to the trunk and upper extremities, and the patient ultimately became bed-ridden. Pathological examination of the cord showed that the condition had apparently begun as a sclerosis of the membranes in the neighbourhood of the points of emergence of the anterior and posterior roots, from which points it had entered the substance of the cord by the lymphatic system of the adventitia of the vessels, and had extended along these vessels irregularly as far as their ultimate terminations, producing a great thickening of the outer wall, with a connective tissue. In addition, the lower portion of the cord, and to a lesser extent the cervical region, showed numerous microscopic tumours, nodular or spindle-shaped or irregular, composed of spindle-shaped cells associated with medullated nerve-fibres.

Dr. EDWIN L. ASH (London) read a paper on

The Psychological Treatment of Certain Functional Conditions.

He said that the condition of hypnotic sleep afforded great facilities for psychological experiments, but its action was apt to be uncertain. He confirmed the statements made by numerous observers to the effect that suggestion therapeutics could be successfully practised without the induction of hypnotic sleep. It was remarkable to find how pain and hyperæsthesia of special senses could be alleviated by a simple system of treatment by suggestion, in the application of which a patient was conscious of all that was being done, and, moreover, retained perfect liberty of thought and action. With regard to the actual application of suggestion in treatment, the practical technique to be followed must be varied according to circumstances. In its simplest form suggestion might be brought to bear on a patient by placing him in a comfortable chair, telling him to close his eyes and to relax every muscle as far as possible; all distracting noises should be avoided and the patient instructed to fix his attention solely and earnestly on what was being said to him by the physician, who, in a quiet persistent voice, enumerated the particular symptoms for which relief was sought, and confidently gave reasons why these would shortly disappear, and assurances that they would undoubtedly do so. Functional diseases particularly lent themselves to treatment by suggestion, because they appeared to be invariably dependent on a mental factor, especially those very common neuroses which came under the headings of neurasthenia and hysteria. As the leading factor in the treatment of these two conditions he had found suggestion to be more reliable in its effects than any other principle, and he had seen many cases improve quickly under its influence. Suggestion was remarkably successful in the functional incontinence of urine so commonly met with in children and adolescents, and he related two cases recently under his observation. He had had successful results in cases of the morphine habit; others had reported good results from the use of suggestion in cases of alcoholism, but he had not himself undertaken the treatment of alcoholism by this means. In mental disturbance, not amounting to actual insanity, he had found the treatment give good results. Even auditory hallucinations, as well as dominant ideas and obsessions, yielded to direct suggestion. Cases of depression might require prolonged treatment, but were often recovered from under its influence. Other morbid conditions in which suggestion was beneficial were sleeplessness when not due to painful organic disease or to circulating toxins, headaches, and neuralgic pains of a functional nature, and some cases of dyspepsia and palpitation.

Dr. W. A. JOLLY (Edinburgh) read a paper on

The Knee-jerk and Simple Reflexes.

His research was carried out in the laboratory of the University of Edinburgh with the coöperation of Professor E. A. Schäfer, and was undertaken in order—(1) to record the interval of time elapsing between a tap on the patellar tendon and the beginning of the electrical variation indicating activity of the quadriceps muscle; and (2) to compare this interval with the delay occurring in the case of reflex action of the muscles of the thigh in response to mechanical stimulation of the skin of the foot. The knee-jerk was timed in the human subject, in the rabbit, intact and decerebrate, and in the decapitate and "spinal" cat; and comparison had been made in the decapitate and "spinal" cat with the homonymous flexion reflex of the hind limb and the heteronymous extension reflex. The time of the human knee-jerk, as determined in three subjects, ranged from 18·6 to 23·7 thousandths of a second (σ). In the intact rabbit the time varied from 5·2 to 6·6σ, in the decerebrate rabbit from 6 to 7·8σ, in the "spinal" cat from 5·3 to 7·9σ, and in the decapitate cat from 6·2 to 12·4σ. Experiments on the "spinal" cat where the knee-jerk and homonymous reflexes were elicited alternately gave a mean of 6·85σ and 12·77σ respectively. The averages obtained in a series of observations on a decapitate cat were: knee-jerk, 8·49σ; homonymous reflex, 16·75σ. The heteronymous reflex was studied in the "spinal" cat, and the times obtained ranged from 11·9σ to 19·9σ. The delay was found to be long soon after the cord was cut. It progressively diminished until three weeks after section the times of homonymous and heteronymous reflexes were closely alike. The delay in the knee-jerk was found to be more variable where the decapitate preparation was used than in the case of the "spinal" animal. To measure the latency of muscular contraction in decapitate preparations, after the knee-jerk had been measured the anterior crural nerve was exposed and cut 2 centimetres above the muscle. The following figures were obtained in two experiments—knee-jerk, 12·4σ, and 10·5σ; latency on nerve stimulation, 2·2σ and 2·7σ. Here the latency of the jerk exceeded that of the muscle stimulated through its nerve by 10·2σ and 7·8σ respectively. The time for a simple reflex, such as flexion of the thigh, was found to be roughly twice as long as for the knee-jerk.

RADIOLOGY AND MEDICAL ELECTRICITY.

FRIDAY, JULY 29TH.

President, Dr. J. MACKENZIE DAVIDSON (London).

Dr. G. ALLPRESS SIMMONS (London) read a paper on

The Constitution and Organisation of the X Ray Department of a General Hospital.

He said that when X ray work was commenced in general hospitals it was for the most part conducted by men who, without possessing medical qualifications, had acquired a

knowledge of the use of X ray apparatus. As examples of this he described the first beginnings of such work at St. Mary's Hospital and St. George's Hospital, and afterwards proceeded to show how the necessity that the radiographer should be medically qualified gradually dawned upon the governing boards of the hospitals. He then described the initiation of the X ray department of St. George's Hospital as being largely due to the representation of the physician to the skin department, Dr. Wilfred S. Fox, who, in conjunction with Dr. Simmons, thought out its original design and equipment. A ward on the entresol floor of the hospital was selected for the purpose. Plans of this ward in its original condition and again after its conversion into an X ray and electrical department were shown, and a description was given of the various pieces of electrical and X ray apparatus and their distribution in the department. Coming now to the staff of the department and their duties, he explained the procedure by which the medical and surgical staff were enabled to make use of the services of the X ray department; he also spoke strongly of the necessity for the records and reports being drawn up in proper form and carefully preserved so as to be available for use at any subsequent time. The paper concluded with a brief sketch of the daily routine of the X ray department.

Dr. W. S. LAZARUS-BARLOW (London) read a paper on

Radiation and Biological Processes,

in which he epitomised the work carried out on the subject in the cancer research laboratories at the Middlesex Hospital during the past five years. He referred to the effects on a photographic plate in the dark (skotographic effects) produced by various animal substances and showed that certain of them were due to the production of minute traces of ammonia, continuing for an almost indefinite length of time. Skotographic substances, certain chemical substances (ammonia, formalin), X rays, and radium produced changes in the development of the fertilised ova of ascaris megalocephala which had many points in common; in his opinion these effects could hardly be termed chemical in the ordinary sense of the term. He also referred to experiments with X rays and radium upon silkworms, and said that the results were in the main similar to those obtained with ova and indicated that radiation was dual in its action, partly accelerating and favouring development and partly retarding and hindering it.

Mr. ALFRED E. BARCLAY (Manchester) read a paper on

The Normal and Pathological Stomach.

He said that his paper was based on the examination of about 350 cases by the bismuth method during the last four years. Many of these cases had been examined many times, either at Ancoats Hospital, the Manchester Royal Infirmary, or at his rooms in conjunction with his partner, Dr. W. J. S. Bythell. In his opinion the diagnosis of gastric conditions could not be obtained from a radiograph or from a single observation, but only from the piecing together of the results of a series of observations. Examinations were best conducted in the upright position, and the operator must be efficiently protected as the examinations were necessarily prolonged and the electric currents were very powerful. The normal stomach was a tubular organ and there was no physiological division of the sac. The tonic action of the gastric muscle gave a more or less fixed level for the upper border of the gastric contents. The shape of the air shadow showed the presence or absence of food in the stomach. With a full stomach there was a transverse straight line below the air shadow, whereas in the empty stomach the lower border of the air shadow was convex downwards. If the stomach was atonic and all the contents had gravitated downwards, the air shadow was as in an empty normal stomach. The first mouthfuls of the bismuth food were watched from the œsophagus through the cardiac orifice and down to the lowest part of the stomach, and the manner in which the food passed down showed whether the gastric walls were in contact or kept apart by other food in the stomach. Spasmodic conditions of the walls caused temporary obstruction to the passage of the food downwards. The rate at which the food left the stomach was varied by many factors, but a bismuth meal should have left the stomach in five hours. When all the food passed straight to the lowest part and formed a transverse shadow well below the umbilicus it was suggestive of atony, but one of the fallacies was that the rest of the stomach might be full of ordinary food through which the bismuth food rapidly gravitated. That the lowest part of the stomach was below the umbilicus was no proof of atony, for a perfectly normal stomach was sometimes displaced downwards in general visceroptosis. The tonic action of the stomach was influenced by the patient's sensations, being diminished by distaste for food and by sudden fear. Nausea also caused diminution in tone, while in the act of vomiting the stomach contracted in an upward direction. Chronic pyloric obstruction, 42 cases of which had been observed by Dr. Barclay, gave rise to retention of food, and the fact of a full stomach was always suggested by the presence of a fluid line below the air shadow, which could be seen rippling and splashing when the patient was shaken. The bismuth food sank through the retained food in large drops and outlined the lowest part only. Peristalsis was usually excessive. The proof of pyloric obstruction was that the stomach still contained some of the bismuth meal longer than five hours in spite of the presence of good peristalsis; observations must consequently be made from time to time to see when the food left the stomach. If it was empty in 10 hours the patient could possibly lead a comfortable life with careful dieting, but if there was still food in the stomach after 24 hours, as frequently occurred in hospital practice, the condition called for surgical interference. Bilocular conditions of the stomach might be either spasmodic or organic, and the organic hour-glass conditions were always complicated by a marked spasmodic element. Functional and organic cases might be distinguished from one another by means of abdominal massage. With regard to the recognition of carcinoma of the stomach, Dr. Barclay observed 41 cases of this disease in which the diagnosis was verified by operation or by the subsequent history of the case. As new growths threw no shadow that could be distinguished it was necessary to rely on displacements of the bismuth food. Aerophagy or air-swallowing was occasionally associated with visceroptosis. These patients swallowed air with their food and were troubled with eructations. In some extreme cases the diaphragm was displaced upwards by the large quantity of air in the fundus. In duodenal ulcer the picture of the stomach was quite normal with the exception that peristalsis was more violent than usual, the food left the stomach in an abnormally short space of time, and there was frequently a separate bolus of food in the duodenum.

Professor WENCKEBACH (Holland) showed a very complete

Stand for X Ray Work.

It was so arranged that the observer had every movement at his command without rising from his seat. It could be employed for demonstrating to a class and for making accurate measurements of the heart and other parts. It was suited for use in the consulting-room as well as in a hospital.

Dr. A. HOWARD PIRIE (London) read a paper on

The Successful Treatment of Hyperidrosis by X Rays.

He said that the armpit was the part most frequently affected. In the cases which he had treated the patient began to perspire after breakfast, and his clothes in the region of the axilla were soon soaked through by the perspiration, so that they had to be changed at least once a day and sometimes oftener. In the ordinary case the perspiration was made worse by heat, but Dr. Pirie described three cases in which it was increased by cold, and he referred to this class as hyperidrosis frigidi. The treatment was by a measured dose of X rays applied once a month for four months, after which every case either ceased to perspire or the amount of perspiration was reduced to less than normal. Six cases were described, in four of which the patients were medical men, and in every instance the result was absolutely perfect. The permanency of the recovery has lasted in one case for three and a half years, in two cases for 11 months, and in the others from three to nine months.

Dr. ALFRED C. JORDAN (London) read a paper entitled

Types of Phthisis from the Radiographer's Point of View.

He said that X ray examination sometimes revealed definite lesions in the lungs after tubercle bacilli had been found in the sputum but before the ordinary physical signs had made their appearance. In examining the chest for pulmonary tuberculosis the cardiac shadow was first noted. In this disease the heart was often small and placed vertically in the thorax. The diaphragm was usually raised on the affected side and its range of movement was reduced. Tuberculosis of the lungs might be divided roughly into two

classes, apical cases and fibroid cases, an apical lesion showing impairment of transradiancy at one or both apices, with a more or less defined, though irregular, margin separating the consolidated from the normal lung. A tuberculous cavity was seen as an irregular clear area surrounded by a dark area of congested lung. Methods had been suggested for the purpose of distinguishing between a congestive tuberculous lesion of the apex and a healed cicatrix, but they were unreliable. Normally there was a certain amount of opacity at the root of the lungs, consisting of a band of shadow approximately parallel with the margins of the heart, from which band shadows radiated into the clear pulmonary area. Linear shadows accompanied by mottling indicated fibroid disease; the extent of the mottling increased as the disease advanced; the mottled areas might coalesce, producing blotches. It was not uncommon to find the apical and the fibroid type of pulmonary tuberculosis combined. In examining several cases diagnosed as bronchiectasis Dr. Jordan had found them to be of two kinds—namely (1) cases in which the lungs appeared to be radiographically normal, the correct diagnosis being septic bronchitis, and not genuine bronchiectasis; and (2) cases which showed the appearance typical of fibroid phthisis, including many with definite clinical evidence of bronchiectatic cavities. In bronchiectasis the tubular cavities were so densely surrounded by fibrosed and congested lung that the net appearance was one of increased opacity, the cavities being invisible to the X ray examination. In old fibrosis the greater part of the lung was opaque, and the heart was usually drawn towards the opaque side. In emphysema the barrel shape of the chest was represented by the position of ribs. The expanded lungs were more transradiant than normal, and tuberculous foci stood out in relief. The presence of clinically diagnosed emphysema, especially when accompanied by bronchitis, often made it impossible to determine whether tuberculous disease existed or not. The diaphragm was depressed on both sides in emphysema, and the cardiac shadow was usually vertical and long. In pleural effusion careful examination should be made of both apices, early tuberculous lesions being often found. The patient should be examined in the vertical position. The lung was never quite clear above an effusion of considerable size. Cases of pneumothorax and hydro- or pyo-pneumothorax should be closely examined for tuberculous disease. An X ray examination frequently cleared up a doubtful diagnosis in cases of pneumonia, abscess of the lung, new growths, and many other pathological conditions.

STATE MEDICINE.

FRIDAY, JULY 29TH.

President, The Right Hon. Lord ILKESTON (London).

Dr. JAMES KERR (London) read a paper on

Provision for Medical Treatment of School Children,

in which he dealt with the subject as it affected urban populations. He pointed out that although all sorts of defects and disorders existed among school children, none were very numerous at school ages beyond a few great groups which included dental cases; eye cases; aural defects, enlarged tonsils, or adenoids, and nasal obstructions; tuberculous or pre-tuberculous conditions, and ringworm. These groups included 95 per cent. of the school cases. The medical treatment of the tuberculous class of case was of a secondary importance compared with the necessity of existence in altered conditions of a hygienic and stimulating environment, but it was evident that for the group of dental, visual, aural, and ringworm cases some general effort would have to be made to bring the means of effective treatment within the reach of all. The London County Council paid 2*s.* per head for every child treated at certain specified hospitals, in many cases guaranteeing a minimum number. It also paid £50 per annum to medical men per half-day per week for the attendance of a clinical assistant. The Council laid a charge of about 4*s.* on each parent, and remitted this for those in destitute circumstances according to a wage scale. He maintained that this was all new work, and that the proportion which had previously found its way into the hands of the general practitioner as remunerative was infinitesimal. He admitted, however, that a possible objection to the scheme was that there was being reared a race who in adult life would be hospital habitués. Referring to the provisional scheme of the British Medical Association as one in which the child, having been seen by the school doctor, was seen again by another doctor, who might later treat it or pronounce whether it should be treated at the public expense, he was doubtful if it was ever likely to come into the field of practical politics.

Professor HENRY R. KENWOOD (London) discussed the question from the standpoint of county areas comprising rural and small urban districts. He considered that it was inexpedient even to attempt to introduce any uniform scheme of medical treatment, because local circumstances and conditions must largely determine local policy. Whatever scheme was adopted its working efficiency would be exceptionally taxed during the first year or two, because of the arrears of treatment which had to be wiped out. Although the machinery for coping with disease and defective children would always be in motion, every decade would see it working at less and less pressure. He agreed with Dr. Kerr that the principal defects to be dealt with were those of vision and hearing, ringworm, and the conservative treatment of the teeth. As a general rule the local medical practitioner was not prepared to undertake to test vision, and he looked forward to the appointment of part-time ophthalmologists to prescribe spectacles, the education authority contracting for their supply, for which whole or part payment in one sum or instalments would, where practicable, be recovered from the parents. He supported the principle of Dr. S. Barwise's scheme of contributory insurance which had been experimentally initiated in Derbyshire. He did not think that the proposal which had been made to subsidise voluntary hospitals out of the education rate was destined to meet with general approval under the existing scheme of medical relief, though it looked as if the provision of medical treatment throughout the country might lead towards the nationalisation of medical service. It might be that medical inspection would educate public opinion upon the present and ultimate value of conserving the physical health of the children, and that more parents would in time be found to make the necessary pecuniary sacrifice for their children, but it appeared likely that in respect of the majority of elementary school children an increasing proportion of the cost of all medical treatment demanded might have to be borne by the education authority, and a small and diminishing part by the charitable public or the Poor-law authorities, until the day came when the whole cost would be thrown on the State. Those who cared for the future of the country would rather that this should happen than that much of the work should be inefficiently performed.

Dr. A. E. R. WEAVER (Abertillery) referred to the difficulty there was in prevailing upon the parents of children to obtain satisfactory medical treatment.

Mr. WILLIAM HODGSON (Crewe) protested most strenuously against the reflections which had been made against the general practitioner, and expressed the opinion that the nationalisation of the medical service had been prematurely announced. It was not fair to assume that the Poor-law had broken down. It was their duty to insist that in the first instance existing means of treatment were made use of before resorting to new and untried methods. It would be a serious matter to provide new hospitals, for, after all, clinics were only hospitals under a new name. They must go slow in the question of the medical treatment of school children as well as in that of a State medical service.

Mr. CYRIL JACKSON, chairman of the London County Council Education Committee, defended the scheme of medical treatment which had been adopted by the London County Council. He considered that the small sum which they would have to spend on any scheme would be money well laid out. The experience in London had been that the parents did take their children to the general practitioner, whose interests were being best served by convincing the parents that defects should be remedied. He agreed with Professor Kenwood that legal action should be taken to enforce treatment.

Dr. ARTHUR DRURY (Halifax) said that if the general practitioner was not fit to undertake the treatment of the ailments which were revealed by medical inspection he was not fit to be on the Medical Register. There was a vast amount of work done at the present time by the general practitioner which was not paid for, and that was why the London County Council thought it was being done cheaply. He deprecated the establishment of a body of medical men or women to undertake work which ought to be done by the general practitioner.

Dr. H. COOPER PATTIN (Norwich) gave an account of the method adopted in Norwich for the medical treatment of school children, which included the appointment of a whole-time school dentist and the provision of the gratuitous treatment of ringworm in necessitous cases. He hoped that some cases of other diseases might be treated at the hospital on terms satisfactory to the medical staff. He agreed with Dr. Kerr that the British Medical Association was becoming too reactionary.

Dr. W. G. SAVAGE (Somerset) agreed with Dr. Hodgson that they must not go too fast. In Somerset a whole-time oculist had been appointed on the staff of assistant school medical officers, who examined all the eye cases in the county. Spectacles were provided by the county council at a cost of 2*s.* 6*d.*, and he had obtained permission to prosecute those parents who, though well able to afford it, would not provide them. He dwelt upon the importance of the work of after-care committees.

Mr. E. H. T. NASH (Wimbledon) considered that the whole work of treatment should be carried out by the general practitioner, who should be adequately paid. He pointed out that the memorandum of the Board of Education distinctly stated that children found defective should be referred to the general practitioner.

Dr. H. MEREDITH RICHARDS (Croydon) would not divorce inspection from treatment—the two should be carried out by the same person. He considered that State interference was justified because the physical condition of the next generation was as important as their mental condition.

Dr. KERR, replying on the discussion, said that in his opinion there was no future for the Poor-law in the treatment of school children. He disagreed with Dr. Richards as to the treatment of children being undertaken by the same person who examined them, though he would not object to a school medical officer treating children who had been examined by another medical officer.

Sir WILLIAM COLLINS, M.P., opened a discussion on

The Reform of Death Certification,

in which he particularly emphasised the unsatisfactory condition of the present system of death certification and of coroners' law. The difficulties in getting any alterations made were largely due to the number of different Government offices which had to deal with the subject. He pointed out that there was very inadequate machinery for bringing about any inquiry into the cause of deaths upon which an inquest was not legally required, and said that still-born children were unknown to the law. He then referred to the great difference there was in the number of uncertified deaths in various parts of the kingdom, as shown by the fact that in London 1·5 per cent. were uncertified, whereas in Inverness-shire the percentage was 45. With regard to the qualification of a coroner, he considered it would be necessary to walk with great wariness, though there was no question that he should have some knowledge of the law of evidence. He advocated the appointment of a medical investigator into the causes of death. Although the medical profession to a certain extent were suspect in Parliament, yet the Legislature was never more anxious than at the present time to listen to the last word of science, if it could only be assured that the latest word was really the last. He pointed out that under the existing state of the law a coroner could only hold a post-mortem examination when an inquest was held, whereas there were many instances in which if a post-mortem examination were made an inquest would be unnecessary.

Dr. R. FARQUHARSON (London) said it was quite possible for De Quincey's phrase, "murder considered as a fine art," to be accelerated by the existing lax methods of death certification. It was impossible, however, to effect any reform unless public opinion demanded it. The only way to secure reform was to go on pegging away inside Parliament and outside. He expressed the opinion that one drawback to the popularisation of cremation was the loose method of death registration.

Dr. T. PARKER SMITH (Worthing) said that as a general practitioner he verified the fact of death in all those instances in which he gave a death certificate. While considering it wrong that a jury should be ruled by a coroner who was not a member of the legal profession, he deplored the looseness of many verdicts of coroners' juries.

Mr. THOMAS JACKSON (Thornton Heath) spoke as a medical coroner of 30 years' standing, and differed from Sir William Collins as to the qualifications which should be possessed by a coroner. In all inquests the question to be decided was a medical one, so that a medical man was the best person to hold the office. He protested that in Sir William Collins's Bill it was provided that a medical man could not be a coroner unless he was also a barrister or a solicitor, while a barrister or a solicitor could be appointed a coroner without being a medical man. He pointed out that the law of evidence in a coroner's court differed very materially from that of a magistrate's court. He considered that if the Government cast upon medical men extra duties they should be paid for them, and if the fact of death were required to be certified adequate payment should be made.

Dr. DRURY hoped that Sir William Collins would insert in his Bill some clause which would assert the principle of the payment of a fee for death certification. He referred to the unsatisfactory manner of dealing with stillborn deaths, and protested against the improper use made of death certificates in the register offices in connexion with the sale by the registrars of copies of the medical certificate for insurance purposes.

Dr. J. C. MCWALTER (Dublin) referred to an instance in which a death was certified as having taken place and insurance money was paid over, whereas the person certified as dead was still alive. He considered it would be a distinct hardship upon the general practitioner to insist upon his verifying the fact of death without any prospect of receiving a fee for the service.

Mr. D. COTES-PREEDY (London), as a member of the medical profession and a member of the Bar, raised the question as to the evidence given before coroners. At present much of it was hearsay and was not legal evidence in any court of justice. The power of coroners to commit for trial for murder should be abolished. If an inquest was a medical inquiry, then the coroner should be a medical man; if it was a legal inquiry, then a knowledge of the law was desirable and only legal evidence should be admitted.

Dr. A. H. BYGOTT (Barking) urged that there should be much more coöperation between the Public Health Department and the coroner's office.

Dr. ROBERT MILNE, medical officer of Dr. Barnardo's Homes, read a paper entitled,

A Defence of the Home Treatment and Prevention of Scarlet Fever,

in which he described the method he had adopted for many years in the treatment of scarlet fever. During the first four days of the disease, beginning at the earliest possible moment, he had pure eucalyptus oil gently rubbed in morning and evening all over the body of the patient, from the crown of the head to the soles of the feet. Afterwards this was repeated once a day until the tenth day of the disease. The tonsils were swabbed with 1 in 10 carbolic oil every two hours for the first 24 hours, rarely longer. Among the advantages claimed for the treatment were that, when commenced early, secondary infection never occurred and complications were unknown, isolation was unnecessary, and there was no need for any after disinfection. He emphasised the need for great care being taken in carrying out the treatment and for beginning it early, for should secondary infection occur, which appeared so apt to attack the weakened tonsils, then complications of any kind might arise. He did not advocate the closing of isolation hospitals, but making them health-giving centres for failing children before they became seriously ill.

Mr. NASH said that he had recently had the opportunity of seeing some of the cases referred to by Dr. Milne, and it certainly undermined all their ideas when they saw a case of scarlet fever in the peeling stage in the ward of a general hospital without any restriction as to contact with the other patients.

Dr. JOHN BROWN (Bacup) congratulated Dr. Milne upon his boldness in bringing forward his method of treating scarlet fever patients in their own homes. After an experience of nearly 30 years he himself had found that a second case in the same house rarely occurred when the method of treatment adopted was by the inunction of carbolised oil daily with a warm bath each morning, and the burning of sulphur twice or three times daily. The advantages of this form of treatment were that the patient's skin was less irritable and he slept better, early peeling resulted, the duration of the illness was lessened, and there were rarely any complications.

Mr. H. BEALE COLLINS (Kingston-on-Thames) had also

seen Dr. Milne's cases, and was impressed with the method in the same manner that Mr. Nash had been. He pointed out, however, that scarlet fever at present seemed to show very slight infectivity, and he found that in Kingston, where there was no isolation hospital, the disease rate of scarlet fever was much lower than that in the adjoining towns of Richmond and Wimbledon where there were large isolation hospitals.

Dr. MCWALTER said that the cost of providing efficient isolation hospital accommodation for scarlet fever in the three kingdoms would be £3,000,000, and they would have done a good work if they could show that this amount could be saved. Many medical men had come to the conclusion that the hospital treatment of scarlet fever had not been to the credit of the medical profession.

Mr. F. E. FREMANTLE (Hertfordshire) read a paper on

The Influence of Part-time Medical Officers of Health upon the Public Health,

in which he expressed the opinion that part-time medical officers of health had in the past played a most important part in the advancement of public health; that their special clinical experience, their personal intimacy with patients, and their comparative financial independence gave them exceptional opportunities for securing acceptance of their views; and that the interests of public health would be best promoted by securing a better education of all medical men in public health work than by making any rule to separate preventive from curative work in the activities of the medical profession.

TROPICAL MEDICINE.

FRIDAY, JULY 29TH.

President, Dr. F. M. SANDWITH (London).

A paper by Dr. ALDO CASTELLANI (Colombo) entitled,

Observations on Tropical Broncho-oidiosis,

was read in his absence by one of the secretaries. In his paper Dr. Castellani cited a type of bronchitis in Ceylon due to an oidium which could be cultivated from the expectoration. There were two forms—one mild, the other severe.

Professor FÜLLEBORN (Hamburg) gave a demonstration on

The Development and Morphology of Micro-filaria,

illustrated with the help of the epidiascope. The various forms of staining for micro-filaria were discussed, and it was claimed that Professor Fülleborn's method succeeded in showing structural differences between the various forms of micro-filaria. A description was given of the methods adopted for preparing specimens, and a large number of Professor Fülleborn's preparations were shown on the illuminated screen. He described, also, the means by which the micro-filaria gained entrance into the human system.

The demonstration was greatly appreciated by the members of the section, and after the paper had been discussed by Dr. G. C. LOW (London) and Dr. C. W. DANIELS (London), a vote of thanks was passed by acclamation to Professor Fülleborn for his address. The President of the Association, Mr. Butlin, was present during the demonstration and afterwards added his thanks to those of the section for the very interesting communication given by Professor Fülleborn.

Lieutenant-Colonel C. BIRT, R.A.M.C., then read a paper on

Phlebotomus Fever,

in which he described the disease in its clinical aspects as observed at Malta. He showed on the screen a number of enlarged temperature charts characteristic of the course of the malady. A comparison was given of the other continued fevers of Malta and their seasonal incidence. The "phlebotomus, or three days' fever," was transmitted by a small insect, the owl midge—Phlebotomus papatasii. The incubation period was from five to seven days. The specific organism had not yet been discovered. It was believed to be ultramicroscopic, and it was said to be able to pass through a porcelain filter. The disease could be transmitted artificially from man to man by inoculation of the blood of a patient into a healthy individual. Some account was given of the human experiments made in this direction on certain members of the Malta garrison, who voluntarily submitted themselves for the purpose. The malady was said to be somewhat widely distributed throughout the Mediterranean region.

Another paper on the same subject was read by Dr. L. P. PHILLIPS (Cairo), who showed that the disease occurred in Egypt, its diagnosis from dengue and influenza being somewhat difficult.

In the discussion which followed Dr. R. ROW (Bombay) and the PRESIDENT took part.

A paper was also read by Dr. PHILLIPS on

Typhoid Fever in Egypt,

in which he proved that the disease was not uncommon in children in that country.

Dr. LOUIS W. SAMBON (London) then read a paper on the

Etiology of Pellagra.

He first of all gave evidence controverting the arguments advanced in favour of the malady being due to maize, sound or unsound. He alluded to the wide distribution of the disease and its occurrence in places where maize was neither cultivated nor eaten. For some years he had had the conviction that the malady was due to a parasitic infection transmitted by some insect. Recently, as director of an expedition sent out from this country to Italy to investigate the disease, he had convinced himself of the soundness of this theory. He placed importance on the fact that pellagra was absent from towns, and that it was confined chiefly to agricultural districts. It recurred annually in the same localities, and its geographical distribution coincided with that of the sand-fly (Simulium). The sand-fly increased greatly in numbers in spring and autumn, at which times also the manifestations of pellagra regularly recurred. The identically same conditions were found in the areas where pellagra had long been endemic—viz., a wooded and hilly country with narrow valleys through which flowed swift running streams, while sand-flies were present in large numbers. He had found cases in districts not presenting these features, but on inquiry he found that the infected family, or families, had moved into the locality from an infected area where all the conditions just mentioned prevailed. Some photographs of pellagra patients were shown by Dr. Sambon. Unfortunately, owing to the lateness of the hour, and there being other papers to be read, it was not found possible to permit Dr. Sambon to complete the reading of his paper, a time limit having been fixed for each reader. There were many, however, who greatly regretted that they could not hear the whole of Dr. Sambon's conclusions. There was practically no discussion, owing to the lack of time available for it, but Dr. CLAUDE H. LAVINDER of the United States Public Health and Marine Hospital Service, who had been for a portion of the time in Italy with Dr. Sambon during his inquiry, was called upon by the President to speak. In the few observations which Dr. Lavinder made he said that he had been much impressed with Dr. Sambon's work in Italy, but it was too soon as yet to arrive at a conclusion as to the etiology of pellagra. Much work remained to be done before the sand-fly theory could be generally accepted by the profession. He hoped that Dr. Sambon would before long be in a position to demonstrate step by step the truth of his hypothesis.

Dr. ANDREW BALFOUR (Khartoum) then read an abstract of his paper on

The Question of Water-supply in the Tropics as Illustrated by the Supply for Khartoum.

This thoughtful paper suffered somewhat from the condensation process necessitated by the lateness of the hour at which it was read.

Dr. BALFOUR also read, in the absence of the author, an abstract of a paper on

Human Botriomycosis,

by Captain R. G. Archibald, R.A.M.C. (Khartoum).

The next contribution was one by Major G. H. FINK, I.M.S., on

Dysentery.

The last item on the agenda for the day was a paper by Dr. F. C. MADDEN (Cairo) on

The Incidence of Bilharziosis in Egypt and its Clinical Manifestations.

Owing to the protracted length of the meeting Dr. Madden had to content himself with demonstrating on the illuminated screen some 39 photographic slides illustrating his cases and showing the various phases of the disease, along with the pathological conditions met with in such instances.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 10, 1910.

Our Risk in Cholera on the Continent.

WE have become accustomed in this country to hear that cholera is again epidemic in European Russia. For the last four years in succession the disease has been widely prevalent in that unfortunate country. The epidemic of 1910 is, however, the most serious that has occurred since 1892, when the malady, which in that year slew more than 150,000 Russians, spread over Europe, extending ultimately in 1903 to our own shores. In the present year, according to the *Journal de St. Petersbourg*, up to August 13th no fewer than 112,987 cases have been reported in Russia, of which 50,286 have had a fatal termination. Discussing these numbers, the special correspondent of a London newspaper, writing from Russia, asserts that these official figures are altogether untrustworthy, and that the death-roll from cholera this year is already nearer 100,000 than 50,000. That the epidemic has assumed alarming proportions is shown by the fact that the returns give 23,944 cholera cases and 10,723 deaths as having occurred in the seven days ended August 13th, but the last weekly returns show 6423 fresh cases and 3254 deaths in the 24 provinces, an encouraging abatement. But most of the grain ports in the Black Sea are infected, and in the populous mining districts of Southern Russia, as well as in the Caucasus, the disease is raging with marked severity.

The danger to this country from Russia is regarded by epidemiologists as greatest when cholera invades the Baltic ports. Already St. Petersburg, Cronstadt, Riga, and Reval are involved, and within the last few weeks the arrival of cholera-infected ships from the Baltic have been reported at certain Swedish, Norwegian, and Dutch ports. Fortunately, the meteorological conditions of the past summer have not been very favourable for the spread of cholera in Northern Europe, and with the advancing autumn the danger may be expected to diminish. It has, however, to be remembered that last year cholera was carried as late as September from St. Petersburg by ship to Rotterdam, where it succeeded in gaining a footing for a time. From Russia during the present year the infection has been conveyed by travellers to Potsdam and Spandau in Germany, and into the Austrian province of Galicia, but in none of these instances did it spread. Quite recently cases have been reported in Vienna and at Pressburg, and the disease has spread across the Russian frontier into the Turkish province of Erzerum. Much alarm has been caused during the month of August by the occurrence of a cholera outbreak in Italy on the western shore of the Adriatic, in Bari, Foggia, and the neighbourhood. It appears that a band of 50 Russian gipsies arrived by ship from a Russian Black Sea port at Brindisi, and travelled northwards along the Italian coast to Trani, where they are said to have washed their soiled linen at the public fountains. Shortly after this the disease broke out in Trani and in the adjacent towns and villages. Within two weeks of the first announcement of the outbreak about 350 cases had been reported, and of these 215 had proved fatal. A panic followed the official recognition of the epidemic in the province of Apulia, notably at Bari, Foggia, and Trani, a town of upwards of 30,000 inhabitants, from which many of the people have fled in fear of their lives. In the remaining provinces of the kingdom the sanitary conditions are good, and there are no signs of the disease spreading. There is seemingly little direct danger to this country from the existence of cholera in South-East Italy. As has been said, it is to the Baltic that we must pay attention when cholera is spreading in Russia.

Our comparatively extensive coast-line, numerous ports, and far-reaching multifarious trade make conditions for these islands which would be very dangerous were it not for our admirable sanitary service. At all the points of possible entrance organisation is ready to check the invader. The respective Local Government Boards have issued warning circulars to all port sanitary authorities, while should any case evade this cordon local means would be alert to deal with it, and any such panic as is reported from Apulia could never occur. There is, we admit, a possibility of the conveyance of the disease by ship to our own shores, but we are informed that at no time before have our port sanitary authorities been so well prepared to deal with imported infection as they are at the present moment; and even if an infected person or persons managed to elude the vigilance of the port officers, or effect an entrance into the country through an insufficiently guarded gate, there is little likelihood that much harm would result. So long as our water-supplies are securely guarded against contamination, so long as our means for excrement disposal are efficient, and so long as general sanitation is maintained at a high level, this country has little to fear from epidemic cholera. The best protection against the spread of the disease is a high standard of sanitation, and it is to a neglect of this that Russia owes her present unhappy and unenviable position. Sanitary administration in that country is woefully neglected, and even in St. Petersburg itself the water-supply and drainage are in a scandalous condition. Added to this, the common people, for want of education, are ignorant and superstitious, in many instances declining to aid in the carrying out of measures devised for their own protection. In the rural districts the old belief has been revived that the medical men are for their own ends spreading the cholera infection, and as a consequence the lives of practitioners and nurses are often placed in jeopardy by the mob. There is a scarcity of medical men in Russia, and in the invaded localities difficulty is experienced in finding doctors to undertake duty. A considerable number of the medical profession in Russia are Jews, but owing to hatred of that race some of the municipalities, even in cases of dire necessity, refuse to employ them. The sanitary state of Russia must be regarded as a menace to the health of Europe, and we fear that this will

continue until appropriate measures are adopted for removing the deplorable conditions in which many of the Russian people, especially of the poorer classes, live.

The Antics of Sportsmen: A Psychological Note.

THE psychological aspect of common every-day action is always interesting, because it affords a clue to the inner mental processes which precede the action; of the meaning of these processes we should otherwise have no trace. To such an extent, indeed, is action the exponent of the inner mind that it is often the only key available for arriving at the solution of questions involving responsibility; and the proper study of action may show that conduct which otherwise seems ridiculous or unnecessary is really of a purposive and useful nature. Further, there are deep-down morbid perversions which are only shown up by conduct, simple examination of the mental state generally failing to indicate their presence. Professor FREUD of Vienna has clearly pointed out the value of what he terms "complexes" in the investigation of mental states, these "complexes" being, roughly speaking, the forgotten remnants of mental states which, coming perhaps by accident into play, influence action in a way which is at first difficult to explain, but may ultimately be traced to the power of the latent processes over voluntary action.

Examples of action which appears futile and affected, and which is the result of unconscious cerebration, are very conspicuous in this sport-loving country among those engaged in games. The antics in question are usually of the greatest service to the player, and while for the most part they are made unconsciously they may be very amusing to the looker-on. Nowhere is this more conspicuous than in the cricket-field, and it is best seen among bowlers, though many a batsman has also peculiarities which are well known to his admirers. Every fast bowler is likely to have his own particular run, and sometimes the dancing steps indulged in are really ludicrous to watch, but they have a meaning which it is worth while to appreciate, the true significance of which gives interest to what at first sight looks an absurdity or an affectation. The complicated proceedings of the fast bowler with a long run and a high delivery are examples of FREUD'S "complex" and are connotative of latent organisation of energy, the result of earlier voluntary acts which have become reflex. These exhibitions of useful, but now unconscious, reflex activity arise in this way. The fast bowler after a run sufficiently long and rapid to develop his full motive force has to stop suddenly and change his leg energy largely to an arm energy. He has to throw all his bodily weight into the transformation, and, inasmuch as he must not go beyond the crease, he comes to learn by experience how best to take his steps so as to obtain the greatest effort and velocity at a given place. And so at last he acquires little arts of pacing, a skip here, a short step or jump there, a straight run in a third place, all of which ultimately settle down into a definite group of movements, and become the "style" or "action" by which he is known. Henceforth it is unnecessary for him to trouble himself with the preliminaries of his delivery. He measures out, generally with his eye, a certain number of paces behind the wicket knowing that his organised "complex" will most certainly land him at the desired spot with the full velocity at the right moment. Assured of this all his attention may be devoted to the length or spin of the ball he is about to deliver. One fast bowler in the Surrey team has a very peculiar run: he marks off about 20 yards behind the wicket, then, after running 5 yards, he gives a little skip, then he runs 10 yards and gives another little skip, after which he finishes the run and delivers the ball. Another bowler in the Worcestershire team makes a series of short steps, looking at a distance like quick taps on the ground, at the commencement of his run, but he lands with unerring certainty at the point beyond the limits of which he must not go. These deposited complexes are wonderfully true in their result; if left to themselves they rarely betray the confidence of the bowler who trusts in them. Now and then the coördinated elements of the run are upset and the bowler delivers a "no-ball," but in comparison with the number of balls bowled this is a very rare occurrence. The perfected complex is arrived at by practice, and this can easily be seen by comparing the difficulty caused by the run to the long jumper with the facility acquired by the fast bowler. Each has at a given place, the one with both legs behind a line, the other with one leg behind a line, to rapidly alter his action. The bowler's run becomes so mechanical that he never thinks of it while bowling—if he were forced so to think he could not bowl. The long jumper, whose course of practice (at any rate in this country) is of the smallest by comparison, has his take-off always in his mind, and in competitions often owes his failures to this fact. There were once two well-known long-jumpers at the same university who took curious runs, and many may know to whom reference is being made. In practice these two men were always successful in taking-off correctly, but in public competitions they failed because, in their anxiety to toe the line accurately, they devoted attention to the run instead of leaving it to their formed "complex," with the result that they failed to win because, literally, of misdirected energy.

FREUD'S complex is, of course, an economy of effort, allowing the performer to develop purposive action in other directions because of freedom from care within a certain circuit. Examples of this might be given from every sport, and where the reason has gone out of the action it degenerates into a superstition. Among batsmen, one noted cricketer always would rearrange the bails before settling down to his work; another could not play an innings unless wearing a particular cap. The professional golfer is, as a rule, free from obtrusive antics, but he has his own settled complexes, which show themselves in stance, swing, and muscular coördination or "strength." Many amateur golfers are full of queer habits, and purposeless as these may be now, they were acquired in a just belief in their utility. The good motorman must have a "complex" of the necessary mechanical movements for driving and turning his car, so that in the dark or in a sudden emergency he can, without having to attend to it, adapt his levers to exigencies; and in the same way the good shot gets his

barrel on the intended line at once without having to think where the trigger is or to what exact part of his shoulder he shall press the stock. There is so much mental strain, in short, that were it not for these mechanical self-acting "complexes" accuracy in sport would be impossible and fatigue too great to permit pleasure.

The Liability of Hospital Authorities for the Acts of their Staff.

WE have received an interesting epitome of the legal decisions bearing upon the question of the liability of the hospital to its patients when an accident arising out of the alleged negligence of surgeons or nurses has taken place. The summary has been compiled by Mr. DIGBY COTES-PREEDY, a member of the medical profession and of the bar, and is, in fact, "a dissertation approved for the degree of LL.M. in the University of Cambridge." That only two cases bearing directly upon this important topic should have come recently before the English High Court of Justice is a matter of congratulation for our hospitals. This immunity may to some extent be due to the charitable nature of the work which is done, but it must also be ascribed in a larger degree to an absence of those accidents which are proverbially to be expected in the best regulated families. At any rate, when untoward things happen they have very generally failed to be attributed to negligence. The enunciation of the law by English judges has been supplemented by Mr. COTES-PREEDY from American law reports and amplified by dicta which, if not binding upon our courts, may be cited in them as propositions for respectful consideration. Those accustomed to the atmosphere of ceaseless vigilance and unrelaxing precaution pervading our operating theatres may feel no surprise that accidents importing blame to those concerned rarely happen, and still more rarely lead to litigation, but the cases to which we now proceed to refer in detail should be borne in mind by the governing bodies of hospitals and by surgeons for several reasons. The most important of these is that the non-liability of those who were made defendants in these cases was due to the essential fact that the persons whose acts were alleged to be negligent were not the servants of the hospitals. There was employment of these persons in a sense, but the service was not such as to render their employers—i.e., the hospitals—responsible for what occurred. Conceivable variations of the conditions of employment might have cast the liability upon those upon whom the plaintiffs desired that it should rest. Mr. COTES-PREEDY'S thesis does not consider the liability of any individual member of the staff of a hospital but only that of the hospital, and the question of the responsibility of the surgeon in his private practice for the acts of nurses is also outside its scope. It will be borne in mind, however, that if a patient sues for damages for alleged injury he selects as defendant a person or a body who will be both legally liable and financially able to pay the compensation which he seeks, and that he does not usually bring his action against a nurse if the alleged act of negligence is hers, because, presumably, her means are insufficient for his purpose. The liability of the employer or principal, to speak generally, arises if a servant or agent acting within the scope of his authority, but without express command, commits a "tort," unless the servant or agent was, in fact, acting "in fraud of" his employer or principal. If the wrongdoer is not a servant or agent it must be proved that the defendant caused the act to be done before he can be made responsible.

Probably the facts of both the cases to which we have referred as being especially of interest to hospitals will be recalled by those who study the incidents of their profession as recorded in the daily or medical newspapers, and we note in passing that the act of alleged negligence in each of these, as well as in two of the American cases referred to, was of the same character—namely, the allowing of hot-water bottles to come in contact with the limbs of an anæsthetised patient. The point, however, to which we call attention does not concern the acts through which the patients were injured, but only the legal situation arising out of the everyday relations inseparable from medical and surgical work. In the first case[1] the defendants were the committee of an association formed to provide duly qualified nurses to attend on the sick within a certain district. The nurses were selected by the association and received salaries from it, and they were supplied by it gratuitously to poor patients and for payment to those of better position, but the object of the association was not profit. By the rules of the association a superintendent exercised certain supervision over the nurses, but when engaged in her duties with a patient the nurse was bound to obey the instructions of the physician or surgeon in attendance, and was not to absent herself from duty without the permission of the patient's friends. At the conclusion of the engagement of a nurse the person engaging her was asked to report on her general conduct in a printed form supplied by the association and marked "to be filled in by the employer." The patient, Mrs. HALL, was burned in the manner indicated above, two nurses having been supplied by the association at the request of her medical adviser. She having brought an action with her husband against the association, obtained a verdict to the effect that she had been injured by the nurses' negligence and that the association had undertaken to nurse her through the agency of the nurses as its servants. The latter finding was reversed by the Court of Appeal on the ground that it involved an inference of law, and the Court, drawing a different inference from that of the jury, deprived the plaintiff of her verdict and entered judgment for the defendants. The association contended that it did not contract to nurse the patient, but only to supply duly qualified nurses, and the Master of the Rolls, in accepting this view, said that if the defendants had undertaken to nurse the patient they would then have been responsible for a failure on the part of those through whom they nursed her to use due care. If, on the other hand, they only undertook to supply competent nurses, as he found they did upon the true construction of the rules mentioned and the other documents in

[1] Hall and Wife v. Lees and Others (1904), 2 K.B. 602.

the case, then, if they exercised ordinary care and skill in the selection of the nurses supplied, their responsibility was at an end. They were not responsible for the nurses' failure to exercise due care and skill.

In the other case referred to[2] the defendants were the governors of St. Bartholomew's Hospital, and the plaintiff was a medical man who had been treated in the hospital, the injuries claimed for being alleged to be due to the plaintiff's left arm being burned by contact with a hot-water tin, and by his right being allowed to hang down so that it was bruised by the surgeon or some other person pressing against it. At the trial Mr. Justice GRANTHAM refused to allow the case to go to the jury on the ground that the operation was under the control of the surgeon and that the governors were not responsible for his action or for the negligence of their staff, even if it were proved that there had been negligence; and this view was upheld by the Court of Appeal. When conducting for the plaintiff an appeal against this decision counsel admitted that the relations of master and servant did not exist between the governors of a hospital and the honorary staff; and the law with regard to the liability of the former may be summarised as follows from the judgment of Lord Justice FARWELL, from which Mr. COTES-PREEDY quotes substantial extracts. Briefly, it was laid down by his lordship that a public body is liable for the negligence of its servants in the same way as private individuals would be liable in like circumstances, the first question being whether any of the persons present when the alleged acts of negligence took place were servants of the defendants. The surgeon, anæsthetist, and other members of the medical staff were not servants, but professional men employed to exercise their profession to the best of their abilities according to their discretion, but not under the orders of the governors in exercising it, or bound to obey their directions. The duty of the governors was limited to bringing to bear reasonable skill and care in the selection of their medical staff. The nurses and carriers were upon a somewhat different footing, being servants for general purposes of the governors of the hospital, but not for the purposes of examinations and operations conducted by the surgical staff. They might be servants of the governors if and so long as they were under their orders, but this relation must cease when the door of the operating theatre closed upon them and when they came under the orders of the operating surgeon.

With regard to the question of contract between the hospital and its patient Lord Justice FARWELL observed: "The contract of the hospital is not to nurse during the operation, but to supply nurses and others in whose selection they have taken due care." And we call attention to this statement of the position because a case which occurred in the United States[3] is brought to our attention by Mr. COTES-PREEDY in which the act causing the injury to the patient was that of a nurse who had only completed nine months of training, the full course being two years. In acceding to the application of the plaintiff, who had been nonsuited, for a new trial, the New York Court of Appeal pointed out that it was for the jury to say whether "in furnishing this careless pupil of limited experience" the defendants fulfilled their "contract obligation to the plaintiff, and that the plaintiff was entitled to damages if owing to a breach of that contract she had been injured." The principles upon which the law is based will therefore be seen to be in no way obscure, and it will be observed that the immunity of the hospitals from liability in respect of those regrettable cases against which all concerned strive with ceaseless care to protect their patients, depends upon conditions which not only conduce to safeguard the governing bodies but which at the same time preserve the proper relations of the professional staff of the hospital towards its governors and its nurses. The surgical and medical staff of the voluntary hospital are not the servants of its governors, nor are the medical officers employed by a public authority the servants of that authority in the eye of the law.[4] The condition of the nurse is one of service in a limited degree, and a definition laid down by Lord BRAMWELL may be cited as applicable, that "a servant is a person subject to the command of his master as to the manner in which he shall do his work." The position in which the hospital stands is that of undertaking towards its patients that they shall receive treatment and nursing from persons carefully chosen as being competent to perform their respective functions; this is the position to be preserved.

[2] Hillyer *v.* Governors of St. Bartholomew's Hospital (1909), 2 K.B. 820.
[3] Ward *v.* St. Vincent's Hospital, New York, 39 App. Div. Rep. 624.

[4] Rylands *v.* Fletcher (1868), L.R. 3 H.L. 330.

Annotations.

"Ne quid nimis."

A DIPLOMA IN PSYCHOLOGICAL MEDICINE.

WITH the increase of specialism, which is a necessary feature of the practice of medicine to-day, the question arises as to the desirability of a post-graduate curriculum and a diploma in any special department under consideration. For some years the aspirant to an appointment in the public health service has found it necessary to supplement his medical qualification by a diploma issued by one of the universities or examining bodies. To obtain such a diploma the candidate has been required to undergo a recognised course of study involving a practical knowledge of hygiene. There can be little doubt that a diploma has proved of utility in the domain of public health, and a similar distinguishing mark is now advocated in the interests of the asylum medical service. It has received the support of the Medico-Psychological Association, which has for some years granted a certificate after examination to medical officers of asylums. The matter has also been under discussion in the Section of Psychological Medicine and Neurology at the recent annual meeting of the British Medical Association, when a resolution was carried approving of the institution of a diploma. The study of insanity, or what is now frequently termed psychiatry, has lately received great impetus with the assistance of modern methods of research. Laboratories are being provided in connexion with our asylums which have already been productive of good work in the etiology and pathology of mental diseases. This work must in time assuredly bear fruit in the more exact and individual treatment of the insane on scientific lines. The teaching of insanity, which was formerly quite neglected, has, during the past decade or more, been satisfactorily

carried out in our schools. It has included clinical demonstrations in asylums, so that every student should have some acquaintance with the subject when he becomes qualified and should be able to deal with a case in practice. But for the man who elects to undertake the care and treatment of the insane as his life's work, either in this country or in the colonies, it would seem reasonable that he should have the opportunity of perfecting himself by a post-graduate course, and of acquiring a diploma as evidence of training. It is suggested that at least one year should be spent by the candidate as a clinical assistant or junior medical officer in an institution, and that he should attend lectures and receive practical instruction in the anatomy, physiology, and pathology of the nervous system, physiological psychology, clinical pathology and neurology, and psychiatry and medical jurisprudence, together with some optional subject such as eugenics, experimental psychology, biochemistry, or bacteriology. We understand that, in response to the movement, the University of Edinburgh and the Victoria University, Manchester, are each instituting a post-graduate course and diploma in psychological medicine, and that the Universities of Cambridge and Durham and other bodies have almost completed their arrangements in the same direction. We note that the Royal College of Physicians of London, after full discussion, has relegated the matter to a committee for report.[1] We may add that the University of London, which until recent years had included mental physiology as a compulsory subject for its highest degrees in medicine and surgery, now treats the subject as an optional one for its Doctorate in Medicine. As regards the metropolis, it is a matter for sincere regret that the proposed London County Council Mental Hospital, with an attached laboratory, as suggested by Dr. Henry Maudsley with his munificent offer, has not yet made further progress. It would realise an ideal for the better post-graduate teaching of insanity and training of asylum medical officers which we heartily commend, and would form a central school to provide the instruction necessary for the examination for a diploma in psychological medicine.

A NEW AND INTERESTING LARYNGEAL OPERATION FOR "ROARING" IN HORSES.

AT a meeting of the Midland Counties Veterinary Medical Association held in Birmingham on August 10th Professor F. Hobday gave a description, preceded by a practical demonstration on two equine patients, of a very interesting laryngeal operation which has been devised for the relief of that troublesome condition so commonly met with in horses known by both veterinarians and sporting men alike as "roaring." Common amongst all classes of horse, especially racehorses and hunters, "roaring" is a defect which diminishes their value very considerably both as regards utility and prospects of sale; in fact, the difference between the same horse when "sound" in wind and after the animal has become even only slightly affected as a "whistler" or a "roarer" often amounts to considerably more than £100. In addition to the objectionable noise produced, an affected hunter or racehorse loses pace, and if forced to proceed will show signs of dyspnœa and even fall down. Surgical examination of the larynx during life demonstrates clearly a paralysis of the left vocal cord, and post-mortem examination shows a very marked atrophy of the laryngeal muscles on the left side; in fact, in chronic cases the muscle tissue completely disappears from certain portions. The sequel to the imperfect closure of the laryngeal orifice is that the paralysed vocal cord (and probably the sound one as well) acts as a foreign body during the accelerated respiration, and the two, by their mechanical obstruction and vibration, give rise to the objectionable sound. The theory that the right vocal cord, which is not paralysed (owing to the fact that the whole mechanism is thrown out of gear), is equally concerned in the production of the noise is now advanced by Professor Hobday, and it is mainly upon this that he bases his observations and claims the right of being able to term the operation a "new" one. The removal of the paralysed left vocal cord has been attempted by many operators, and the one which causes the least troublesome sequelæ was first performed by a distinguished German veterinarian, Professor Günther of Hanover. He obtained adhesion between the paralysed vocal cord and the arytenoid cartilage by the very ingenious method of stripping the ventricle, the raw surfaces thus produced uniting firmly by granulation. To do this he obtained entrance into the larynx through an incision involving the crico-thyroid ligament, and, in addition, either the thyroid or the cricoid cartilages, and often one or more tracheal rings. So far as can be gathered, the right side was always severely let alone. Dr. Williams, the professor of surgery in Cornell University Veterinary School, from whom Professor Hobday acknowledges much help and encouragement, first demonstrated the operation of stripping the left ventricle in England last September, using a saw to cut through the thyroid cartilage. Professor Hobday has, however, by his present method of operating so improved upon the original idea that no cartilage whatever is now injured. He claims for this that some of the greatest drawbacks to the success of the operation, the dangers of stenosis and granulation tissue, are now absolutely done away with, and he also advocates the stripping of *both* ventricles. The surgical sequelæ, as illustrated by specimens at the Birmingham meeting, are that the vocal cords are permanently held back out of the lumen of the larynx, the orifice being thus dilated to its fullest possible extent. In fact, as he himself expressed it, the operator may be said to make an extra tracheal ring, or to practically fix within the larynx a natural tracheotomy tube. The theory appears to be a sound one, but the lecturer refused to commit himself to any absolute statement, the reason given being that although he had operated personally upon nearly 200 patients without a single mishap or death, so many had been done within the past six months. He preferred to await the test of the forthcoming hunting season, and promised the members present that they should, at a later date, have literal statistics of the results. In the meantime he read a number of letters from owners whose horses had been operated upon, most of these being very gratifying. The results will be watched with considerable interest, not only in the veterinary but also in the medical world.

QUININE AS A LOCAL ANÆSTHETIC.

THE value of quinine as a local anæsthetic has hardly as yet been fully recognised in this country, but in America it is used extensively. Any salt of quinine appears to be useful, and the efficacy of the drug seems to be enhanced by its association with the hydrochloride of urea, and some manufacturers make a salt which is said to be a double hydrochloride of quinine and urea. In the August number of the *American Journal of Surgery* Dr. A. E. Hertzler of Kansas City, Missouri, has given a fuller account than we have seen elsewhere of the action and use of quinine as a local anæsthetic, and the following is the gist of his teaching. When a soluble salt of quinine is injected into the tissues a coagulable exudation forms, beginning a few minutes after the injection and becoming complete after 24 or 48 hours. The skin is thickened and has a reddish colour, but it is not tender, so that the change is hardly inflammatory. The exudation is not organised into fibrous tissue, but is absorbed after a week or two. It is important, therefore, to bear in mind the fact that the skin becomes reddened after injection and that this is no evidence of

[1] THE LANCET, March 12th, 1910, p. 729.

inflammation. If the skin is injected and at once incised much of the quinine solution escapes into the wound and very little exudation occurs, and the anæsthesia is of short duration, though even then it may last a few hours. In these circumstances the wound heals as if no local anæsthetic had been used; therefore, this is the method to be adopted when a short duration of anæsthesia will suffice and prompt healing of the wound is desired. When, however, primary union is not possible and a more prolonged anæsthesia is wished for it is important that the tissues should not be incised at once; in fact, not until the infiltration has formed, for when this infiltration has occurred the anæsthesia may last several days. For the mucous membrane a 10 per cent. solution may be applied upon pledgets of cotton wool. If the quinine is used for injection, solutions from ½ to 1 per cent. should be employed. It may be used either for infiltration or for "nerve blocking." After the injection the operation may begin at once if only temporary anæsthesia is needed, or after half an hour or more if a more prolonged anæsthesia is desired.

THE WORKHOUSE INFIRMARY AND THE RECEPTION OF URGENT CASES.

A SOMEWHAT unusual incident occurred at Devizes recently in connexion with the admission of a sick tramp to the workhouse infirmary. A medical man, Dr. A. Vivian Trow, appears to have responded promptly to a summons and to have found a tramp lying very ill in the roadway, with a sympathetic crowd round him. He was informed by the man himself that he had taken arsenic, and as the symptoms were consistent with this explanation and the spasms were severe he decided that the best course in the patient's interest was to remove him at once to the workhouse infirmary in order that suitable treatment might be employed. Accordingly, with the assistance of a clergyman, Canon Gardner, who allowed the man to be moved into his garden, a stretcher was obtained, and he was placed upon it. Dr. Trow went in advance on his bicycle, but on reaching the workhouse unfortunately failed to attract attention at the door of the master's house. According to a letter which he wrote afterwards in explanation of his action to the chairman of the house committee he rang twice, waited four or five minutes, and then proceeded through the workhouse kitchen to the infirmary and requested the head nurse to prepare a bed. This was done and the man was placed in it under Dr. Trow's supervision, as he had been brought there before Dr. Trow could leave the premises in order to inform the medical officer. At this stage the master arrived and expressed surprise, which no doubt he felt, at finding an inmate admitted to the workhouse and installed in it without his knowledge. Dr. Trow in the letter referred to, complained that the master's manner was offensive, but the master at the meeting of the board of guardians at which the incident was discussed denied this, and maintained that he should have been informed and his consent obtained before the tramp was introduced into the institution. In this assertion the master was no doubt technically correct; it was very unfortunate that he did not learn earlier that his presence was required. Moreover, when he addressed the board on the subject, it appeared that the tramp had not taken arsenic at all, but had recovered in due course from the effects of a severe bout of beer-drinking combined with sundry doses of gin. This laid Dr. Trow open to criticism on the part of the guardians, and for this reason the apparently trivial circumstances are worth noting. Dr. Trow acted with despatch and humanity, it seems to us, in a difficult position. If the man had died or had had his life saved with difficulty in the infirmary Dr. Trow would have been praised; no doubt if death had supervened, as it might have done, whether it were due to arsenic or to alcohol, and if the story had come out at an inquest, the guardians and the master would have endured with equanimity credit for their readiness to waive ceremony and to dispense with red tape in the cause of humanity. As the case turned out, numerous letters in the *Wiltshire Times*, including one from Mr. G. S. A. Waylen, the medical officer of the workhouse, have since attested to the public the difficult position in which a medical man is placed who has to decide rapidly and to do what is best for his patient in circumstances of urgency. The correspondence referred to shows the high opinion entertained by his colleagues for the active sympathy and zeal evinced by Dr. Trow, and it also raises the question of what the medical man's duty is when such occasions arise as that described. We may suggest with regard to this aspect of the subject that the exceptional character of the incident in question was due to the failure of a bell to attract attention. Even if this mischance were to occur again it should not be very difficult, as a rule, to ascertain whether the medical officer in charge of the infirmary is present in the workhouse, or whether the master or matron is to be found by someone sent in search of them. Naturally, someone in authority must be consulted if it can be done without undue delay. An institution for the treatment of the sick and injured, whether it be a voluntary hospital or a workhouse infirmary, must have its regulations as to the admission of inmates, and a medical man not connected with it can hardly claim a right to have patients placed in its beds on his sole authority. From whatever motives of humanity he may act or however disinterested he may be in the course he desires to take, he is obliged to consider the position of others as well as his own. This, no doubt, Dr. Trow was prepared to do when he rang the bell to summon the master of the Devizes workhouse, and he did in fact give the earliest possible notice of what he had done to the medical officer of the infirmary. Whether a bell did not ring or a workhouse porter was not at his post on one particular occasion we need not inquire or conjecture, for the precise chain of incidents is not likely to be repeated. The medical man acted, as members of the medical profession must act, according to his discretion and with a full sense of his responsibility towards a patient thrust upon him by chance, and it is to be regretted that unneeded prominence should have been assigned locally to the technical irregularity of a humane deed.

AORTIC REGURGITATION IN INFANCY.

IN another column we publish an interesting communication by Mr. W. Ansley-Young on a case of aortic regurgitation in an infant. The child was aged 18 months and was extremely pale. The physical signs are duly described, but, as Mr. Ansley-Young remarks, the most interesting question is the cause of the lesion. The mother, aged 28 years, gave a history of two attacks of rheumatism, the first having occurred six years before the child was brought for examination and the second two and a half years before. Did this child contract an endocarditis in utero as a result of the rheumatic virus in the mother, or was the case one of congenital morbus cordis in which the aortic valves were malformed or deficient? An attack of rheumatic fever in the mother during pregnancy or a strong tendency to rheumatism in the parents may possibly be a cause of fœtal endocarditis, and either the aortic or mitral valves may be affected. The endocarditis is nearly always of the chronic or sclerotic variety; very rarely indeed is it of the warty or verrucose form. When the aortic orifice is affected frequently all trace of the segments disappears, leaving a stiff membranous diaphragm perforated

by an oval or rounded orifice. In the various forms of congenital heart disease, when there is some defect of development, the valves of the right side of the heart are more frequently affected than those of the left side. but when there is an error of development of the aortic valves the condition found is similar to that just described as caused by endocarditis, and from a pathological examination only it might be very difficult to arrive at a conclusion as to the exact etiology of the lesion. In the case described by Mr. Ansley-Young there was a history of rheumatic fever in the mother, and therefore the conclusion would be justifiable that the aortic lesion was caused by fœtal endocarditis.

A PREHISTORIC SPINAL INJURY.

"NOT long since, in the course of an excursion in the neighbourhood of Arles-sur-Rhone, in the South of France," writes Dr. A. S. Gubb from Aix-les-Bains, "I was taken to see some prehistoric tombs that had recently been unearthed. One of them had contained no less than a hundred skeletal remains, among them a human vertebra in which was firmly implanted a flint arrow or spear head. As will be seen from the accompanying photograph, it pierced the body of the vertebra from the front and then became detached from the shaft of the arrow or spear. The bone is

somewhat disintegrated, but it would appear to be a dorsal vertebra. M. Lacaze Duthiers, professor at the Arles College, informs me that several of these tombs have been discovered in the neighbourhood, all of them in the commune of Fontvieille. They all open to the west and, speaking generally, they comprise an underground gallery dug out of the soft tertiary or Helvetian mollasse (the shell-bearing stone of Fontvieille) with instruments that have not left any trace on the well-finished walls to show what sort of tools were used for the purpose. The walls incline inwards above so as to reduce the space to be covered in, and this space is filled by large slabs of stone of the same nature as the walls, and the same as was employed for the 'covered alleys' and dolmens. 'This roof is just beneath the surface of the ground and must have been surmounted by a tumulus, remains of which are, in one instance, still visible. One of them (the one at Bounias) indeed presents remains of a cromlech. With regard to the age of the specimen (which has been deposited in the museum at Arles) the numerous flint arrow and spear heads, polished hard stone axes, rabbits' tibias finely pointed, serpentine and other stone beads, a gold and pearl plaquette, fragments of pottery, and a bronze dagger-blade appear to authorise the assumption that the men of unknown race who built these tombs by hewing out the stone on plateaux at that time surrounded by water and who, though they made use of polished stone tools, were acquainted with bronze, belonged to the extreme end of the neolithic age, or possibly the commencement of the bronze period."

SEAWEED IN DISEASE OF THE THYROID GLAND.

Dr. Reid Hunt and Dr. Atherton Seidell, in a paper printed in the *Journal of Pharmacology and Experimental Therapeutics* for August, Washington, believe they have found in bladderwrack (Fucus vesiculosus) an iodine compound which may properly be called thyreotropic—that is, a compound which increases the activity of the thyroid in doses far smaller than any other iodine compounds with which they have experimented can do. The plan of the experiments was to determine the smallest amounts of various iodine compounds which when given to animals caused distinct changes in their resistance to aceto-nitrile and also to determine the maximum effect which could be obtained. If the hypothesis that certain compounds are thyreotropic is correct, then these compounds may be expected to cause a change in the resistance in much smaller doses in terms of their iodine content than the other compounds. If, further, iodine compounds affect the resistance of animals to aceto-nitrile only through the thyroid gland, then it may be anticipated that the maximum effect of one compound would differ markedly from that of others. The experiments appear to be in accord with the hypothesis in both respects. The results are thus summarised: 1. The iodine of bladderwrack has a specific thyreotropic action; it is from 80 to 200 times as active as that of any other iodine compound studied (with the exception of the thyroid). 2. It is possible to distinguish, by means of physiological tests, between the iodine of the thyroid and that of bladderwrack and between the latter and that of other iodine compounds. 3. It is possible to obtain more marked physiological effects with mixtures of iodine compounds than with the latter alone.

MALTA FEVER IN UGANDA.

FOR some years a mysterious epidemic malady has been prevalent in some parts of the Uganda Protectorate, and has been regarded variously as beri-beri, dengue, or possibly kala-azar. While the Sleeping Sickness Commission of the Royal Society was passing in 1908 through Kampalu, the native capital of the country, their attention was called to the disease, locally known as "muhinyo," by Sir Apolo Kagwa, K.C.M.G., Prime Minister of Uganda, and as a result it was decided to make some investigation into the nature of the epidemic malady, Colonel Sir David Bruce (director of the Commission) and Dr. A. D. P. Hodges (principal medical officer of the Protectorate) proceeding to Masuka, which is situated on the borders of the Ankole Province, from which "muhinyo" has been chiefly reported. By arrangement with the Prime Minister and a local chief some 50 invalids were brought together for examination. The result of this inquiry has been recently published in the Proceedings of the Royal Society by Colonel Sir David Bruce and Captain A. E. Hammerton, Captain H. R. Bateman, R.A.M.C., and Captain F. P. Mackie, I.M.S., members of the Sleeping Sickness Commission. After detailed clinical and bacteriological investigation the diagnosis was reduced to a "continued fever," either enteric or Malta fever. Agglutination tests with cultures of bacillus typhosus and micrococcus melitensis were applied to the blood of several patients, the results being negative with the former but positive with the latter in fairly high dilutions. The spleen in two cases was punctured, and from this material cultures were procured and the organism found was indistinguishable from micrococcus melitensis, the

cultural characters differing in no way from those of that organism. Subcultures injected into a monkey caused illness, and when the agglutinating power of its blood was tested with a strain of micrococcus melitensis from Malta positive results were obtained in dilutions of 1 in 200. Conversely, a rabbit inoculated with the Malta strain had its blood tested with the "muhinyo" organism, when the results were positive in dilutions of 1 in 200. It was thus established that the microbe obtained from the spleen of "muhinyo" patients and that from cases of Malta fever were identical. The people among whom "muhinyo" had raged for some years comprised two tribes, the first being one of the lowest class, morally and socially, in Uganda. They are dirty in their habits and persons, living in rude grass huts which they share with their domestic animals, including goats. A few of the better-off persons in the tribe keep cows, but goats' milk is largely consumed by all. The members of the second tribe are of a higher type: they are more prosperous and use the first tribe as their serfs. They keep both cattle and goats, consuming the milk of both animals. The flesh of goats, partially cooked, is eaten by both tribes. Our readers may remember that the Malta Fever Commission in 1905 found that the drinking of goats' milk was the means by which the disease was conveyed to man in Malta, and that 50 per cent. of the goats in the island were affected in some way or other by the malady, 10 per cent. actually excreting micrococcus melitensis in their milk. The condition of the Ankole goats was, therefore, inquired into, and for this purpose by the directions of Sir Apolo Kagwa a flock of 24 goats was collected within the infected area and brought to the investigators. The blood of three of these animals gave a positive reaction when tested with a strain of the micrococcus melitensis from Malta, as also with the "muhinyo" organism obtained from the Ankole patients. Further, micrococcus melitensis was isolated from the tissues of two of the goats. It seems, therefore, clear that the Uganda disease called "muhinyo" is in reality Malta fever and that goats also suffer from the malady and act as a "reservoir" of the virus. There can be no doubt that, as in Malta, the infection in Uganda is spread by consumption of milk from infected goats.

BLEACHED FLOUR.

AN interesting review of the circumstances which led step by step to the modern processes of bleaching flour appears in a bulletin (No. 68) recently issued from the Hygienic Laboratory, Washington, by Dr. Worth Hale, assistant pharmacologist in the laboratory. It is shown that in the old days of grinding the wheat between stones the resulting flour was stored "for the purpose of ageing it." Incidentally, the flour lost during this time a part of its natural yellow colour. At first public feeling appeared to be against the introduction of flour whitened by even a natural process, but with the introduction of roller-milled flour a demand gradually arose for the whitest possible flour. Storage, however, was an uncertain and a costly method, and soon the idea of bleaching rapidly by chemical agents was put into practice. The first process was introduced in 1898, when ozone was employed. It was soon shown, however, that the bleaching effect was not due to ozone, but to certain oxides of nitrogen. Later, a process was patented in which nitrogen peroxide was produced by means of the flaming electric arc in air. Another method consists in employing the same agent obtained from nitrosyl chloride. Dr. Worth Hale has made a number of interesting experiments with bleached and unbleached flour, and his conclusions agree with those of Professor Halliburton, who does not hesitate to condemn the practice of bleaching flour by nitrous acid on the ground that it renders the gluten indigestible and may give even poisonous properties to the loaf. Dr. Worth Hale says that his results show the artificial bleaching of flour to have a deleterious action because of the lessened digestibility of the gluten of such flour, and possibly also because of the presence of definitely toxic substances, although these, it must be admitted, are present, even in over-treated flour, in only minute amounts. Independently of these points, also, the bleaching process may produce harmful results on account of the presence in flour bleached by such processes of small amounts of the nitrites. This action is exerted in two ways—by a decrease in the rate of protein digestion and by changing other medicinal substances which may be taken at the same time into markedly toxic agents, or by decreasing their normal action, or possibly through the chemical change, altering entirely their therapeutic effects. That the nitrites may enter the stomach from other sources does not alter the fact that they act deleteriously, and that their ingestion should be decreased as much as possible.

ANTWERP SCIENTIFIC EXHIBITION.

AN international scientific exhibition will be held in Antwerp from Sept. 17th to 25th next, on the occasion of the Fourteenth Flemish Congress of Natural and Medical Science. The exhibits will be classified in four principal sections, viz.:—

Section 1. Physico-chemical Sciences: Including new apparatus and inventions, laboratory installations, lanterns, microscopes, and the scientific applications of photography; collections of chemical productions, geological specimens, and crystals.
Section 2. Biological Science: Apparatus for experimental research and demonstration, zoological and botanical collections, fossils, microscopical preparations, and micro-photographs.
Section 3. Medical Science: Experimental apparatus, pathological specimens, radiograms, surgical instruments and appliances; operation-room, sanatorium, and hospital furniture; electro-medical and X ray apparatus.
Section 4. Scientific books and reviews.

The aim of the promoters is to make a complete collection of all that has contributed to recent advances in the theoretical and applied sciences, and they appeal to all scientists for their coöperation and assistance, which can best be given by intrusting to the officials for the purpose and period of the exhibition any suitable instruments, apparatus, or specimens they may possess. Particulars will be supplied by Dr. G. Van der Gucht, Cuylitsstraat, 11, Antwerp.

THE TREATMENT OF PROLAPSE OF THE RECTUM.

THE extreme form of prolapse of the rectum, or, as it is sometimes called, procidentia recti, does not respond well to most methods of treatment, and from time to time new operations have been devised to cure this condition. Several attempts were made to prevent the descent of the bowel by operations intended to narrow the lower portion of the gut, but it cannot be said that any great degree of success followed them. T. R. Fowler endeavoured to suspend the rectum by sutures carried round the coccyx. J. P. Tuttle suspended the bowel by drawing a portion of it through an opening just in front of the coccyx. Jeanneal in 1889 endeavoured to give the rectum complete rest by making an artificial anus in the left iliac region, but he drew up the sigmoid and rectum from below into the wound, and it is probable that the success he obtained was due to the fixation of the bowel to the abdominal wall. Verneuil was the first intentionally through an abdominal wound to draw the bowel up and to fasten it. This operation has been called colopexy or sigmoidopexy, and several variations of it have been employed. The intestine at first was stitched to the parietal peritoneum, but there is certainly a risk of the adhesions stretching. Others raise a peritoneal flap and stitch the

bowel to the underlying fascia. In THE LANCET of to-day we publish an account, written by Mr. Leslie W. Dryland of Kettering, of an operation for the cure of prolapse of the rectum which consists in attaching the upper part of the sigmoid to the iliac fossa, a flap of peritoneum having been previously raised above and external to the external iliac vessels. He has performed the operation in one case with a satisfactory result. The novelty of the method consists in the site of the attachment. These various operations of sigmoidopexy have all given good results in a large proportion of the 50 cases which have been recorded. The risk in the operation is small and the benefit appears to have been very great. So far as we are aware, no evil results have followed any of these operations, and they are deserving of trial in cases where simpler methods have failed. It is somewhat difficult to decide whether the modification suggested by Mr. Dryland is an improvement or not on the previous methods of practice, but it appears to be sound in principle.

THE EXPERIMENTAL STUDY OF HEREDITY.

THE report of the committee of the British Association, consisting of Mr. Francis Darwin (chairman), Mr. A. G. Tansley (secretary), Professor Bateson, and Professor Keeble, shows that the grant of £30 allotted at Winnipeg for this committee has been used at Cambridge in connexion with the researches carried on by Miss E. R. Saunders, Miss Wheldale, and Mr. R. H. Compton. Miss Saunders's work in connexion with Mendelism is well known. Her study of the inheritance of double flowers in stocks, wallflowers, hollyhocks, carnations, meconopsis, petunia, and other genera has been continued. Experiments on the inheritance of other characteristics have also been undertaken in various plants, but in the case of stocks it is hoped that from this year's results a material addition to the records of the last three years will be obtained, and that then it will be possible to give a full account of the work on the very complex problem which is here involved. In the cases of the other plants named, most of which are biennial, the experiments have necessarily been lengthy, but the work of four seasons will shortly have reached a point at which a definite statement can be made. Miss Wheldale is conducting experiments on the chemistry of pigmentation in plants, in continuation of her work already published. Mr. Compton is investigating the occurrence of sterility in the crosses between cultivated peas and a wild form brought from Palestine by Mr. Arthur Sutton. He is also conducting various other breeding experiments. The amount of work on heredity that is being carried out with regard to plants nowadays is very significant.

THE ANÆSTHETICS COMMITTEE OF THE BRITISH ASSOCIATION.

AMONG the reports presented at the recent meeting of the British Association is one from the Committee on Anæsthetics which has, of course, special interest for medical men. The report contains no purely clinical contributions, such as that which we published last year,[1] but the work which is being carried on, having both an experimental and a clinical side, seems likely to provide results of a highly important character from the purely practical point of view. From the experimental point of view the committee may well claim to have already achieved very considerable results. The well-known work of Dr. A. D. Waller upon percentage administration of chloroform and that of Dr. G. A. Buckmaster and Dr. J. A. Gardner upon the blood content of chloroform during inhalation and after death is being continued by the committee which includes these gentlemen. The importance which accurate results as regards amounts of chloroform recoverable from the body after death might assume in determining the cause of death in cases where this takes place during or shortly after operation needs no demonstration. Perhaps the most promising experiments, however, dealt with in the present report were those which were made to show the effect of chloroform when combined with air or with oxygen in deficient and in excessive quantity. Here we have very definite confirmation given to the clinical view that oxygen is of service in diminishing risk from chloroform. Using blood pressure and respiration as indications, these experiments bring out very clearly the value of oxygen. The smaller the amount of oxygen the greater is the depressing tendency of the chloroform and the larger the proportion of oxygen the less is this tendency. The experiments provide many strong indications for the continuous use of oxygen with chloroform during long or severe operations when this anæsthetic is employed for such purposes. We notice one point, in an appendix by Dr. Waller, wherein our own opinion would not coincide with that of the writer, and possibly his clinical *confrères* also are not in agreement with him. We allude to his opinion that the administration of chloroform can be rendered as safe as that of ether. In the laboratory this has perhaps been demonstrated, though we would be prepared to deny even this if the test were applied of performing serious operations upon two sets of animals anæsthetised with the two different drugs. In the operating theatre any such contention is at present, we believe, not to be maintained.

[1] THE LANCET, July 3rd, 1909.

THE organising committee of the International Congress of Tuberculosis to be held in Rome next year has fixed the date of the meeting for Sept. 24th to the 30th. The President of the Congress will be Professor Guido Baccelli, and the general secretary Professor v. Ascoli of Rome.

HOSPITAL SATURDAY FUND.—A meeting of the workpeople of Sir W. G. Armstrong, Whitworth, and Co., Limited, was held about a week ago in the dining-room at the Manchester works, to consider the question of forming a branch of the Hospital Saturday and Convalescent Fund. The Lord Mayor was present, and said they all knew that they had in Manchester "one of the finest infirmaries and some of the most up-to-date hospitals in the world, and that the Royal Infirmary would eventually minister to 600 patients. It was entirely for the benefit of the working man." He went on to say that the infirmary alone required £12,000 a year additional income. The income of the Fund this year was £7441, exceeding that of last year by £569. Perhaps, considering the depression in trade, that was "not wholly disappointing," but it was to be hoped that next year it might be five or six times that amount. The Lord Mayor said that a few days before he had been present at the centenary celebrations of a working men's society where they had invested no less than £14,000,000. A penny a week from the thousands engaged in their trade would be a godsend to the hospitals. The spirit of the men is good, and it seems as if it was only necessary to have the case of the hospitals put fairly before them to ensure a hearty response, for a resolution was unanimously passed to the effect that "a branch be formed and that they do all in their power to further the interests of the institutions." If this were done at all the works, great and small, in the area ministered to by the Manchester hospitals, it would help the funds very considerably and do much to ensure the efficient rendering of the services which they were intended to give, and the knowledge that the mite of each one contributed to this great end would give a feeling of satisfaction in that they were givers as well as receivers.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7906 births and 3940 deaths were registered during the week ending Sept. 3rd. The annual rate of mortality in these towns, which had increased from 10·7 to 12·1 per 1000 during the four preceding weeks, was again 12·1 last week. During the first nine weeks of the current quarter the annual death-rate in these towns averaged only 11·4 per 1000, and in London during the same period the death-rate, calculated on the probably over-estimated population, did not exceed 10·5 per 1000. The lowest reported annual rates of mortality during last week in these 77 towns were 2·6 in Hornsey, 4·3 in Smethwick, 4·7 in Leyton, and 4·9 in Bournemouth; the rates in the rest of the towns ranged upwards to 20·4 in Grimsby and in Sunderland, 24·7 in Birkenhead, and 25·0 in Tynemouth. In London last week the reported death-rate did not exceed 10·8 per 1000. The 3940 deaths registered last week in the 77 towns showed an increase of 10 upon the low number in the previous week, and included 703 which were referred to the principal epidemic diseases, against numbers which had increased from 347 to 720 in the four preceding weeks; of these 703 deaths, 527 resulted from diarrhœa, 68 from measles, 57 from whooping-cough, 18 from scarlet fever, 17 from enteric fever, and 16 from diphtheria, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was equal to 2·2 per 1000, against 1·5 and 2·2 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Willesden, Croydon, Walthamstow, Southampton, Halifax, or in nine other smaller towns; the annual death-rates therefrom ranged upwards, however, to 6·6 in Preston, 6·7 in Bootle, 6·8 in Birkenhead, and 7·1 in Hull. The deaths attributed to diarrhœa in the 77 towns, which had risen from 115 to 516 during the previous four weeks, further rose to 527 last week; the highest annual rates from this cause during the week were 5·2 in Preston, 5·3 in Burnley, 5·9 in Bootle, 6·3 in Hull, and 6·4 in Birkenhead. The 68 fatal cases of measles showed a slight decline from the number in the previous week, and caused an annual rate of 2·9 in Oldham. The 57 deaths from whooping-cough showed a further decline from the numbers in recent weeks, and was the lowest number recorded in any week of this year; the highest recorded rates from this disease during the week under notice were 1·6 in Rotherham and in Gateshead and 2·1 in Grimsby. The 18 fatal cases of scarlet fever showed a slight decline from the number in the previous week, and included 5 in London, 3 in Liverpool, and 2 each in West Ham, Coventry, and Manchester. The deaths from enteric fever numbered 17, against numbers declining from 15 to 7 in the four previous weeks; 3 deaths were returned in London and 2 in Portsmouth. The 16 fatal cases of diphtheria showed a considerable decline from the numbers in recent weeks, and were fewer than in any previous week of this year; 5 deaths were recorded in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1490, 1423, and 1447 in the three preceding weeks, rose to 1455 at the end of the week under notice; 183 new cases of this disease were admitted to these hospitals during the week, against 163, 143, and 159 in the three preceding weeks. The 1005 deaths from all causes in London last week included 115 which were referred to pneumonia and other diseases of the respiratory system, showing a decline from the numbers recorded in the two previous weeks, and were 8 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 33, or 0·8 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during the week were duly certified in London, Leeds, Bristol, Bradford, Newcastle-upon-Tyne, Nottingham, and in 53 other smaller towns; the 33 uncertified causes of death in the 77 towns included 6 in Liverpool, 4 in Stoke-upon-Trent, 3 in Birmingham, and 3 in Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 779 births and 483 deaths were registered during the week ending Sept. 3rd. The annual rate of mortality in these towns, which had been equal to 13·3 and 13·6 per 1000 in the two preceding weeks, declined to 13·3 in the week under notice. During the first nine weeks of the current quarter the death-rate in these towns averaged 12·7 per 1000, and exceeded by 1·3 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the week under notice in these eight Scotch towns ranged from 7·2 in Leith and 9·3 in Aberdeen to 16·8 in Perth and 20·2 in Dundee. The 483 deaths from all causes in the eight towns last week showed a decrease of 9 from the number in the previous week, and included 93 which were referred to the principal epidemic diseases, against numbers rising from 44 to 83 in the four preceding weeks; of these 93 deaths, 68 resulted from diarrhœa, 10 from whooping-cough, 7 from diphtheria, 5 from scarlet fever, and 3 from enteric fever, but not one from small-pox or from measles. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 2·6 per 1000, against 2·2 from the same diseases in the 77 English towns. The deaths in the eight towns attributed to diarrhœa, which had increased from 20 to 63 during the five preceding weeks, further rose to 68 last week, of which 41 occurred in Glasgow, 8 in Paisley, 7 in Dundee, 6 in Greenock, and 4 in Aberdeen. Of the 10 fatal cases of whooping-cough, which slightly exceeded the numbers in recent weeks, 6 were recorded in Glasgow and 2 in Greenock. The deaths from diphtheria, which had been 6 in each of the two preceding weeks, were 7 last week, and included 3 in Glasgow and 2 in Edinburgh. Of the 5 deaths from scarlet fever 3 occurred in Glasgow and 1 each in Edinburgh and Dundee. The 3 deaths from enteric fever were registered in Glasgow, Aberdeen, and Perth. The deaths referred to diseases of the respiratory system in the eight towns, which had been 39 and 49 in the two preceding weeks, declined to 47 last week, and were 2 in excess of the number recorded in the corresponding week of last year. The causes of 13, or 2·7 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 655 births and 335 deaths were registered during the week ending Sept. 3rd. The mean annual rate of mortality in these towns, which had increased from 15·3 to 17·1 in the four preceding weeks, declined to 15·2 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these Irish towns averaged 16·1 per 1000; the mean rate during the same period did not exceed 11·4 in the 77 largest English towns and 12·7 in the eight principal Scotch towns. The annual death-rate during last week was equal to 14·9 in Dublin, 16·1 in Belfast, 13·0 in Cork, 14·4 in Londonderry, 17·8 in Limerick, and 13·6 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 14·8 per 1000. The 335 deaths from all causes in the 22 town districts last week showed a decrease of 42 upon the low number returned in the previous week, and included 47 which were referred to the principal epidemic diseases, against 53 and 74 in the two previous weeks; these 47 deaths were equal to an annual rate of 2·1 per 1000; the rate last week from the same diseases was 2·2 per 1000 in the 77 English towns, and 2·6 in the eight Scotch towns. The 47 deaths from these epidemic diseases in the Irish towns last week included 39 from diarrhœa, 4 from whooping-cough, 2 from enteric fever, 1 from scarlet fever, and 1 from diphtheria, but not one from small-pox or from measles. The deaths attributed to diarrhœa in the 22 towns, which had increased from 9 to 54 in the five previous weeks, declined to 39 last week, of which 16 occurred in Belfast, 12 in Dublin, and 5 in Londonderry. The 4 deaths from whooping-cough and the fatal cases of scarlet fever and diphtheria were recorded in Dublin. The 2 deaths from enteric fever were registered in Dublin and Londonderry. The deaths in the 22 towns last week included 40 which were referred to pneumonia and other diseases of the respiratory system, against 42 and 50 in the two preceding weeks. The causes of 14, or 4·2 per cent. of the deaths registered last week in the Irish towns were not certified; in the 77 English

towns the proportion of uncertified deaths last week did not exceed 0·8 per cent., while it was equal to 2·7 in the eight Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: S. H. Birt to the *Balmoral Castle*, on commissioning. Surgeon: R. J. G. Parnell to the *Balmoral Castle*, on commissioning.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel John C. Culling, from the Royal Army Medical Corps, to be Colonel, vice D. O'Sullivan, retired.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel William Heffernan retires on retired pay.

Captain Leonard Bousfield, from the Seconded List, is restored to the establishment.

Colonel M. W. O'Keefe, from Rawal Pindi, has arrived home and taken over his duties as Inspector of Medical Services. Colonel R. H. S Sawyer has been appointed Administrative Medical Officer, Dublin District. An exchange on the roster for service abroad has been approved between Lieutenant-Colonel C. T. Blackwell and Lieutenant-Colonel R. H. Hall. Lieutenant-Colonel H. M. Sloggett has been selected for increased rate of pay under Article 317 of the Royal Warrant. Major C. K. Morgan, from Dundalk, has been selected for appointment as Instructor at the Royal Army Medical Corps School of Instruction at Aldershot in succession to Major C. C. Fleming, D.S.O., and has been ordered to join on Sept. 7th. Major E. G. Browne, Dublin, will embark for India about Oct. 5th next for duty in the Northern Command. Major G. B. Carter, on return to duty from sick leave, has been appointed to the Irish Command and posted to the Dublin District. Captain M. Sinclair, from Sialkot, has been posted to Cork. Captain W. Mitchell has been transferred from Ambala to the Station Hospital at Subathu. Captain F. A. McCammon has been granted leave of absence for six months. An exchange on the roster for service abroad has been approved by the War Office between Captain P. H. Henderson and Captain R. Rutherford. Captain A. W. Gibson has been placed under orders for a tour of service at Gibraltar. Captain B. B. Burke, from Devonport, has embarked for West Africa. Captain H. W. Russell, on termination of his course of instruction at the Royal Army Medical College, London, has joined London District for duty. Captain E. J. H. Luxmore has been appointed Staff-Surgeon to Meerut Cantonment. Captain C. R. Millar, Cork, has been placed under orders for service in West Africa and will embark early in October next. Captain W. Riach has been appointed specialist in Ophthalmology to the Queen Alexandra Military Hospital, Millbank. Captain F. Ashe, from Colchester, has been selected for service in India, and has been appointed to the Southern Command, embarking on the *Dongola* from Southampton on Sept. 21st. Captain L. F. F. Winslow has been transferred from Bradford to Lichfield. Captain A. C. Vidal, from Bloemfontein, has taken up duty at Pretoria. Lieutenant H. W. Carson has been transferred from Nowshera to Peshawar Station Hospital. Lieutenant A. G. Jones from Bulford Camp, has joined at Tidworth, Salisbury Plain. Lieutenant F. J. Stuart has been appointed a specialist in Dermatology and Venereal Diseases to the 7th (Meerut) Division. Lieutenant E. T. Gaunt has been appointed on probation and posted to the Military Hospital at Shorncliffe. Lieutenant H. H. Leeson has been selected for service with the Egyptian Army, embarking on Sept. 7th.

INDIAN MEDICAL SERVICE.

Captains to be Majors: Thomas Shepherd Novis and Herbert Joseph Richard Twigg. Lieutenants to be Captains: Robert Henry Bott, Edmund Brodie Munro, William Edward Rees Williams, Sorabji Jamasji Bhathena, Frederick O'Dowde Fawcett, Joseph Frain James, Hugh William Acton, Vivian Bartley Green-Armytage, Arthur Norman Dickson, Alexander Glover Coullie, Alexander James Hutchison Russell, Robert Ernest Wright, Dewan Hakumat Rai, William Hunter Riddell, Frederic Allan Barker, Arthur Waltham Howlett, Arnold Newall Thomas, and Francis Shingleton Smith.

Captain William Malcolm Thomson has resigned.

Surgeon-General J. G. MacNeece, British Service, has been appointed Principal Medical Officer, 8th (Lucknow) Division. Colonel C. F. Willis has been appointed to officiate as Deputy Principal Medical Officer, His Majesty's Forces in India, during the absence on leave of Colonel D. ffrench-Mullen. Colonel A. M. Crofts, C.I.E., principal medical officer of the Jullundur Brigade, has been granted eight months' leave of absence from India. Lieutenant-Colonel W. H. B. Robinson, agency surgeon, Bengal, has been appointed as Residency Surgeon, Jaipur. The services of Lieutenant-Surgeon C. M. Thompson have been placed permanently at the disposal of the Government of India by H.E. the Commander-in-Chief. Lieutenant-Colonel E. A. W. Hall, civil surgeon of Dacca, has been granted three months' privilege leave. The Chief Commissioner of the Central Provinces has appointed Major W. H. Kenrick, civil surgeon of Nimar, to the Executive and Medical Charge of the Khandwa District Jail. Major H. J. Walton has been granted two months' extension of his leave. Major A. Fenton has been appointed to officiate as Civil Surgeon of Mandalay, vice Lieutenant-Colonel R. H. Castor, granted leave. Major S. A. Harriss has been appointed Sanitary Commissioner of Burma in place of Major C. E. Williams. Major W. R. Battye has been appointed Residency Surgeon at Mewar. The services of Major D. H. McD. Graves have been replaced at the disposal of H.E. the Commander-in-Chief by the Government of India. Major C. R. Bakhale has been granted six weeks' privilege leave, and Major S. Hunts seven months' combined leave. Major A. N. Fleming and Major C. E. Williams, Bombay, have arrived home on leave. Captain H. Ross, Assistant Plague Medical Officer at Jullundur, has been posted for duty under the Government of India in the Home Department. Captain A. S. Leslie has been appointed Superintendent of the Insein Central Jail in place of Captain H. H. G. Knapp, transferred. Captain C. E. Southon, District Plague Medical Officer at Ludhiana, has been granted 20 months' combined and study leave. Captain G. S. Husband has been appointed a Specialist in the Prevention of Disease. Captain E. C. Hudson has been selected to act as Health Officer of Simla, vice Captain H. M. Mackenzie, appointed to officiate as Professor of Physiology at the Medical College, Calcutta. Captain W. J. Frazer has been appointed Civil Surgeon of Chanda, Central Provinces. Captain A. Cameron has joined for temporary duty in connexion with plague prevention in the Punjab. Captain L. J. M. Deas has been posted as Medical Officer in Charge of the Mewar Bhil Corps. Captain L. Reynolds has been appointed to act as Principal of the Lawrence Military Asylum, Sanawar. Captain N. S. Wells, Captain G. M. Millar, and Captain V. O. Beit, Bombay, have arrived home on leave from India.

A committee comprising Surgeon-General C. P. Lukis, Director-General, I.M.S., as president; Lieutenant-Colonel William A. Morris, R.A.M.C., Lieutenant-Colonel Charles M. Moore, I.M.S., and Major Jay Gould, I.M.S., as members, and Major Bruce Seton, I.M.S., as secretary, has been appointed to consider the possible conversion of the present regimental hospital system of the Indian Medical Service into a station hospital system, somewhat on the lines of that existing in the case of the British Army.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st London (City of London) Field Ambulance: Eardley Lancelot Holland to be Lieutenant.

Attached to Units other than Medical Units.—Lieutenant Thomas H. Livingstone to be Captain.

The Territorial Decoration has been conferred upon the undermentioned officers: Major Henry Christopher Lamport, attached to the 2nd West Lancashire Brigade, Royal Field Artillery; Major William Alfred Dingle, attached to the 1st London Divisional Engineers, Royal Engineers; and Major John Ritchie, attached to the 8th (The Argyllshire) Battalion, Princess Louise's (Argyll and Sutherland Highlanders).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain Thomas Mahon Morton, from the List of Officers attached to Units other than Medical Units, to be Captain, with precedence as in the Territorial Force.

BATTLE-FIELD EXERCISES FOR THE ROYAL ARMY MEDICAL CORPS: HUMOURS OF MEDICAL MANŒUVRES.

The Royal Army Medical Corps has recently had an

unusual opportunity of showing its readiness for active service and of rehearsing the removal of wounded men from the battle-field under circumstances of as much realism as was practicable in peace time. During the August military manœuvres on Salisbury Plain and elsewhere in that neighbourhood the operations on the 22nd, 23rd, and 24th of the month provided the incidents necessary for the purpose, under the direction of Major-General Sir Henry Rawlinson. An invader was supposed to have landed in Dorset and to have sent a small force (the White army) in a northerly direction. The defending force (the Brown army) consisting of 3rd Division troops to represent a division under General Drummond, was to supply the casualties. This force encountered a portion of the invaders on August 22nd, and on the following day the two armies fought a battle at Yarnbury in Wiltshire. The enemy was represented by a very small force, but each man carried 150 rounds of blank ammunition so as to be able to keep up an intense fire. Labels indicating a great variety of wounds were at suitable periods attached to the uniform of a proper proportion of men of the Brown army, who thereupon fell and remained on the field until removed by the regimental stretcher-bearers. The labels directed whether the men in each case were to be removed "sitting" or "lying," or whether they might walk to the ambulance. The stretcher-bearers rendered first-aid, taking the field dressing which every soldier carries and applying it in such a manner as would be required for the wound described on the label. The bearer divisions of the field ambulances then took charge of the men, carrying them to the horsed ambulances and dressing stations. They were then conveyed to the tent divisions of the field ambulances near Shrewton and Winterbourne Stoke, the next stage being removal to the clearing hospital at Tidworth Park. The battle resulted in the defeat of the White army, which retreated to Codford. The men of the Brown army who became casualties numbered 33 on August 22nd and about 1840 on the 23rd, on which day the last convoy of wounded arrived at Tidworth about 10 P.M.; on August 24th there was a further list of casualties. This simulation of physical injury naturally presented some features more or less humorous, according to the point of view of the person concerned. A soldier labelled as severely wounded was quite pleased at being carried on a stretcher by the bearer division for several miles on a hot day, with the prospect of a comfortable repast at his journey's end; on the other hand, it was rather tantalising when the patient was told at the hospital that the treatment of the internal injuries mentioned or implied in his label made it necessary to withhold all food and drink for some time. For the purpose of these manœuvres three field ambulences were mobilised. Each field ambulance was provided with 10 large wagons for conveying the sick and wounded, each wagon having accommodation for 12 patients who can sit up or for less than half of that number in the recumbent posture. Besides these 30 wagons there were also water carts, kitchens, and soup boilers on wheels. The *personnel* of each field ambulance included 192 officers and men of the Royal Army Medical Corps, and 59 of the Army Service Corps, giving the medical force a total strength of 753. Two of the ambulances proceeded towards the scene of the battle, while the third one remained in reserve. Every officer and soldier who became a casualty was sent back to quarters after receiving attention at the hospitals. Major-General Sir Henry Rawlinson, the director of the medical manœuvres, has already issued some preliminary comments on them. He said that the movement of a field ambulance to a flank within view of the enemy might, and did, partially disclose to the enemy the intention of the divisional commander. He also praised the heartiness with which all ranks coöperated in making the situation as realistic as possible.

REGULATIONS OF THE TERRITORIAL FORCE AS TO DISABILITY THROUGH MILITARY DUTY.

The *Broad Arrow* of Sept. 2nd states that in the revised regulations of the Territorial Force it is provided that a sum not exceeding 3*s.* 6*d.* a day may be granted for a period not exceeding six months to a non-commissioned officer or man who is injured in and through the performance of military duty, and rendered incapable of resuming his trade or calling. The injury will be at once reported to the General Officer Commanding-in-Chief, who will, if he considers it necessary, after perusal of the medical evidence, direct an officer of the Royal Army Medical Corps to report on the case unless the injured man is in a civil hospital. In the latter event the injured man should be directed to furnish a medical certificate from the hospital authorities as to the nature of his injuries. This gratuity may be paid under the same conditions to a Territorial who is incapacitated by illness proved to the satisfaction of the Director-General of the Army Medical Service to have been contracted in and through the performance of military duty, but no claim will be allowed which is not preferred within 12 months of the termination of the military duty in question. If the gratuity is claimed on account of an injury the application will be forwarded for the decision of the General Officer Commanding-in-Chief; if on account of illness, it will be sent to the War Office; in all cases it will be accompanied by (1) the proceedings of the board (if any) which reported on the case, or if no board has assembled, a statement setting forth in detail the circumstances in which the disability was contracted; and (2) by a certificate showing the period during which the non-commissioned officer or man was unable to follow his trade or calling.

Correspondence.

"Audi alteram partem."

BLACKWATER FEVER.

To the Editor of THE LANCET.

SIR,—Dr. J. E. Frere's notes and comments in THE LANCET of June 18th, p. 1716, on the second case of blackwater fever described by him are apt to create the impression that doctors in Burma are not yet aware of the existence of the disease in this country, and that in the treatment and prophylaxis of malaria large irregular doses are prescribed in a haphazard way. As far back as 1899 I drew attention to the fact that the disease existed in Burma. In that year I had my first case, a Ghurkha Sepoy, belonging to the Military Police Battalion at Myitkyina, whibh is the headquarters of a very malarial district in Upper Burma. This case was described by me in an article on "Blackwater Fever in Burma" on pp. 328–331 of the *Indian Medical Gazette* of September, 1907. I also drew attention to the fact that cases had occurred and been recognised in certain other districts of the province. During 1908–09 I made further investigation in the Myitkyina district, where four more cases occurred in the battalion. These cases were officially reported, and on inquiry I found that the disease was well known to the native Kachins, who spoke of it as "ngak," and diagnosed it in two cases that occurred in the headquarters Military Police Hospital. I have reason to believe that there is now very little, if any, ignorance on the part of medical men in Burma as to the existence of the disease in certain parts of the province. At least a dozen subassistant surgeons working under me in the Myitkyina district were shown cases and were trained to diagnose the disease. Some of these medical subordinates are now working in other districts, but they are wide awake and on the look out for cases wherever they go. I feel sure that they would not have been guilty of diagnosing the civil servants' malarial attacks, with bloody urine, as "malaria affecting the kidneys." The fact that Dr. Frere's patient was a civil servant in Burma leads one to infer that his medical attendant was a Government civil surgeon, and it is not conceivable how a medical officer holding such a responsible appointment could have made such an erroneous diagnosis when one knows that blackwater fever has attracted so much attention, and so much has recently been written on the subject in THE LANCET, the *Journal of Tropical Medicine*, the *Indian Medical Gazette*, and *Indian Public Health*, which are all supplied at Government expense to each civil surgeon in the province. Captain S. R. Christophers, I.M.S., and Dr. C. A. Bentley's memoir on "Blackwater Fever" was published by Government in 1909 and a copy supplied to each civil surgeon. The subject was also discussed at the Bombay Medical Congress in 1909, and the Transactions of the Congress have been published. Dr. A. G. Newell, editor of *Indian Public Health*, published his book on "Blackwater Fever" in 1909, and this has probably had a wide circulation in India and Burma.

As regards quinine administration in Burma, it may be safely asserted that 30-grain doses of the sulphate are not prescribed. So far as I am aware, 10 grains thrice daily is the usual practice, the doses recommended by Major Leonard Rogers, I.M.S., in his book "Fevers in the Tropics." I am aware of the fact that opinions still differ as to the dosage of quinine. For instance, at the recent Imperial Malaria Conference held at Simla in October, 1909, Major C. Donovan, I.M.S., stated that he usually employed 30 grains of the sulphate for a dose, or 20 grains of the hydrochloride, or 10 grains of the acid hydrochloride. Major James, I.M.S., on the other hand, favoured the "fractional method" of treatment and made some very valuable suggestions with reference to "problems relating to the use of quinine." He has brought ample evidence to prove that there is a great deal yet to be learnt as regards the proper dosage of quinine in cases of malaria. He has pointed out very emphatically that the matter is very complex, the success of the drug depending upon a number of factors about which we know little or nothing at present. The time of administration is all-important, because we know that the drug is immediately fatal to only one stage of the parasite—namely, to that stage which follows sporulation. It would take up too much of your valuable space to quote the many unsolved problems suggested by Major James, whose valuable contribution should be in the hands of all medical men interested in the subject of malaria and blackwater fever.

In regard to the quinine prophylaxis of malaria, different methods have been adopted. Major James recommends a small dose every evening, but admits that good results can be attained by other methods, as was obtained by Colonel G. F. W. Braide, I.M.S., in the Punjab jails, where 15 grains were given once a week to each prisoner. The following figures show the results obtained in 1908 by me in the Myitkyina Military Police Battalion, the average strength in each year being a little over 1400 men. Admissions for malarial fever at headquarters and the eight permanent outposts:—

	Indoor.	Outdoor.	Total.
1906	1602	3372	4974
1907	1693	2714	4407
1908	328	200	528

Ten grains of quinine sulphate dissolved in acid sulph. dil. and water were given by the mouth on two successive days, commencing from May and ending in December. During this year there were four cases of blackwater fever, the notes of which will be sent for separate publication.

What Dr. Frere says about small regular doses of quinine being used in Africa is not borne out by the observations recently made by a correspondent (Surg.-Lieut.-Col. I.M.S., Retd.) on pp. 29 and 30 of the *Journal of Tropical Medicine and Hygiene*, dated Jan. 15th, 1910. He says: "Although I made scores of inquiries I failed to meet anyone using quinine as a prophylactic who took more than 5 grains of the remedy daily. Very few took as much, the majority contenting themselves with 3 grains a day or with only occasional doses of 10 grains or so whenever they feel run down; others again took 15 grains once or twice a week, and so on. Several men, from indifference or inertia, frequently omitted to take any quinine whatever for days together, while a few professed to have no faith in its protective power and did not take it at all. No wonder that under such circumstances quinine prophylaxis of malaria on the West Coast of Africa has been a failure, and that deaths from blackwater fever still are, as in the past, of constant occurrence." This emphasises the fact that the problems suggested by Major James should receive careful and early consideration, but there will probably be no uniformity of practice amongst medical men in the quinine prophylaxis and treatment of malaria till such time as the points raised by him are satisfactorily settled.

I must apologise for the length of this letter, but I trust that I have succeeded in showing that the question of blackwater fever and the correct treatment and prophylaxis of malaria are receiving careful attention in India and Burma. It sometimes happens that patients have their own ideas on treatment, and very likely the civil servant from Burma was one of these. The statements made by such patients are apt inadvertently to cause unmerited reflections of ignorance or neglect on the part of their medical attendants.

I am, Sir, yours faithfully,

LAWRENCE G. FINK, M.B., C.M. Edin.,
July 21st, 1910. Civil Surgeon, Myaungmya, Lower Burma.

THE CAUSATION OF DIFFUSE LIPOMA OF THE NECK.

To the Editor of THE LANCET.

SIR,—I shall be much obliged if you will kindly assist me in an inquiry which I have at present in hand. Your readers are doubtless well familiar with the condition of diffuse lipoma of the neck and other regions, which we have been accustomed of late (following, I think, the lead of Mr. Morrant Baker) to associate with beer-drinking. Has this condition come under observation in any of the domestic animals? I have at present two good examples of it in asses, and I am told that others may be found if looked for. The condition should be sought, if I am not mistaken, in castrated males which have been well fed.

If any of your readers can refer me to anything which has been written on the subject or to examples which they have themselves observed I shall be much obliged. Some may possibly remember that in my recent paper before the British Medical Association I made especial reference to this region in connexion with paleogenetic speculations.

I am, Sir, yours faithfully,

Haslemere, Sept. 4th, 1910. JONATHAN HUTCHINSON.

THE OUTBREAK OF CEREBRO-SPINAL MENINGITIS IN LEICESTERSHIRE.

To the Editor of THE LANCET.

SIR,—As this outbreak of cerebro-spinal meningitis has caused much writing in the press and sundry statements have been attributed to the Local Government Board inspector, I would ask those who are interested in the question to await the publication of the full notes. These will be published by me, so far as my cases are concerned, when I am able to add the report of the examinations by the several bacteriologists who have the matter in hand.

I am, Sir, yours faithfully,

GUY C. B. ATKINSON.

Long Clawson, Melton Mowbray, Sept. 6th, 1910.

THE TREATMENT OF RINGWORM.

To the Editor of THE LANCET.

SIR,—I was agreeably surprised to read Dr. J. Mackinnon's letter *re* action of formalin 40 per cent. solution on ringworm. Dr. Mackinnon does not specify if he used formalin with such success in ringworm of the head. Its use he appears to limit to tinea corporis, which most medical men admit sometimes yields to the domestic remedy ink. In my practice I have found formalin very deadly to fleas as well as to flies.

I am, Sir, yours faithfully,

SANDY MACPHERSON.

THE JAPAN-BRITISH EXHIBITION: AWARDS.

To the Editor of THE LANCET.

SIR,—On July 9th the name of our firm appeared in the List of Awards as the only recipients of the Grand Prix for disinfectants, and we duly announced that fact by an advertisement in the columns of your journal. We now learn (eight weeks after the original publication of the list) that within the last few days a similar distinction has been conferred upon another firm of manufacturers, making our statement erroneous as at the present time. We now ask the courtesy of your columns to correct our statement, which was, of course, made in good faith and in no sense intended to mislead. Yours &c.,

For JEYES' SANITARY COMPOUNDS CO., LIMITED,
WM. PLANNER, Secretary.

Cannon-street, E.C., Sept. 3rd, 1910.

ON THE NOTIFICATION OF CONSUMPTION.

To the Editor of THE LANCET.

SIR,—I see that in THE LANCET of August 20th a correspondent, Dr. J. Cunningham Bowie, comments upon a letter from me which you published in your issue of August 6th, and says that he would feel much obliged by my replying to three questions which he propounds at the close of his communication. Before stating these he points out, apparently as a ground of complaint against me, that I have not disproved a single fact or controverted a single statement in

Dr. R. Farquharson's article, and that I have evaded the issue by appealing to authority in order to gain further knowledge. It would have been presumption in me, a layman, to do otherwise, and I would point out that Dr. Farquharson's article, upon which I was commenting, consisted to a very large extent of the citation of authority. The question at issue, which I did not intend to evade, is one upon which opinions and "authorities" differ, and the differences of medical opinion and medical authority, to which laymen must largely look for guidance, naturally impress a layman who ventures to try to form an opinion and to ascertain where the right course most probably lies. The authorities which Dr. Bowie says I set up happened to be to hand in a preceding issue of THE LANCET, that of July 16th, wherein I had read some of the papers and speeches upon the occasion of the conference at Edinburgh on the prevention of tuberculosis, because as a layman I take some interest in medical proposals affecting the laity. I referred in particular to what Professor Sims Woodhead had, in fact, said, because Dr. Farquharson seemed to me to have applied to it an interpretation wholly unwarranted, and I cited certain observations of Dr. W. Leslie Mackenzie because they contained contradictions, derived from actual experience of fact, of that which Dr. Farquharson predicted speculatively and as if no experience of fact existed for our guidance. I might have referred to papers read on the same occasion and in the same issue of THE LANCET by Dr. E. W. Hope, Dr. H. Scurfield, Dr. A. K. Chalmers, Mr. T. J. Stafford, and Dr. A. M. Williamson as more or less relevant to the subject of Dr. Farquharson's article, but did not do so. I refer to them now because they seem to me to indicate the lines upon which the compulsory notification of tuberculosis, if adopted, would be sought to be made of public utility, and because they therefore may help to supply answers to questions with which Dr. Bowie apparently seeks to puzzle an already puzzled layman. To these questions I personally can only reply tentatively and generally with the prefatory observation that each of them includes more than one inquiry, and that more definite answers should be obtainable from such authorities as the gentlemen whose names I have given above.

Dr. Bowie asks: 1. "If compulsory notification of consumption implies the subsequent control and supervision of the subject, how is this to be carried out, and what are the special regulations the consumptive must comply with and observe in public and private life?" As I understand it, the control and supervision to be exercised will depend largely upon circumstances, and particularly upon whether the patient voluntarily or otherwise finds himself subject to conditions under which control and supervision can be exercised, but that in circumstances where control may be possible to a very limited degree only there will be available instruction and advice, accompanied possibly by some kind of supervision and some measure of assistance in the carrying out of such instruction and advice. I cannot oblige Dr. Bowie by drawing up regulations for the public and private life of the consumptive which either "must" or should be observed. 2. "What action would the authorities take in the case of a consumptive who was under the care of a private medical practitioner, and who at the same time was able and desirous to follow his business and supervise same; or in the case of a person in private life?" In reply to this I would hazard the suggestion that the authorities in all cases would take such action as under the advice of their medical officers they might deem desirable in the public interest, and that this in the cases indicated would involve little or no interference on their part, according to circumstances. After all, the compulsory notification of disease is no new thing, and Dr. Bowie might have asked the same question not very many years ago, substituting "a scarlet fever patient" for "a consumptive" and might have received a like answer. In the case of scarlet fever notification was desired with a view to the protection of the public, and it is acted upon with as little inconvenience as possible to those not likely to endanger the public. The object in the case of tuberculosis, as I understand it, is pretty much the same—viz., to protect the public, but less directly, against the undesirable prevalence of a disease, and particularly to do so by obtaining early information as to its existence with a view to dealing with it in its initial stages. Notification followed by control or supervision exists in other matters besides infectious disease, generally with a view to the assistance of those who otherwise could not take care of themselves, and without any great inconvenience to those whose position renders control and supervision unnecessary. 3. "When would the authorities cease to control and supervise the consumptive?" I am afraid I do not understand the question, nor was I aware that there was any proposal in existence that any control or supervision exercised should be temporary. I imagine that either or both would be continued, having regard to the circumstances, as long as the need for them existed in a sufficient degree to justify their continuance. Again, the gentlemen whose names I have given above, and many others, could, I feel sure, answer the question better than I can.

In conclusion (1) it appears to be the opinion of a large number of medical men, who must be our advisers in such matters, that tuberculosis is prevalent, that its prevalence is undesirable, and that it can be rendered less prevalent by the removal of causes, by the treatment of cases at early stages and by other steps which they recommend, and which cannot be taken on any effective scale without the intervention of public authorities, local and otherwise; and (2) in order to facilitate that intervention certain medical men and others, rightly or wrongly, ask that where tuberculosis exists the public authorities, local and otherwise, should receive information of its existence as a matter of legal compulsion applied to all classes in the state.

I have ventured to suggest that this demand (2) is not unreasonable if effective measures are to be taken and if the problem of the diminution of tuberculosis is to be fully understood by those concerned in its possible prevention or cure, and I endeavoured in my previous letter to point out that the terrors of compulsory notification had been exaggerated by Dr. Faquharson, doing this by reference to one of his authorities, Professor Sims Woodhead, and to Dr. Leslie Mackenzie. I do not know why Dr. Bowie should complain of my appealing to authority, or how otherwise he thinks I ought to have disproved or controverted Dr. Farquharson's statements, but at all events I disclaim any desire or power to do so personally. I regret that Dr. Bowie should see any resemblance between myself and Jacob in a not very creditable episode of his career, but hope that he did not mean unkindly a reference that I do not fully understand. After all, he might have compared me to Habakkuk, or Balaam's ass, and I am glad that he did not extend his biblical illustrations farther.

I am, Sir, yours faithfully,

Sept. 3rd, 1910. FORENSICUS.

THE BRUSSELS UNIVERSAL EXHIBITION.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Continued from p. 590.)

The British Chemical Section.

ON the one occasion when the British section at an important international exhibition has been really well organised the whole show was relentlessly swept away by a fierce conflagration. Some years ago all France was convulsed because one of the guardians at the Louvre was discovered frying a chop on a small coke stove used for cooking. In varied terms and with much eloquence public speakers and writers pointed out that if the attendants were going to cook chops near the pictures the risk of fire would be increased and the safety of one of the world's greatest collections seriously jeopardised. But at the Brussels Exhibition it was not a guardian's chop that was cooked near art and scientific treasures; it was elaborate dinners for many thousands and thousands of people. Then these people were not satisfied with eating, most of them smoked and threw the burning ends of their cigars and cigarettes on the dry plank floors just outside the doors of the exhibition. No smoking was allowed inside, but there were verandahs or terraces which formed part of the main buildings that were burnt down, and here people were smoking all the time. Smoking should not be allowed in the main buildings at exhibitions, and here the fire is said to have originated close to the post-office. This post-office was at the end nearest to the old Brussels or Kermesse side of the great

terrace, facing the monumental fountain and the principal tramway station. On one side of the post-office were the offices of the exhibition directors, on the other side lavatories, and all along the great terrace several restaurants. This meant much smoking in a lath-and-plaster building, where light inflammable materials abounded. The portion of the Belgian section nearest to the post-office was devoted to lace, clothing, and light fabrics. Ladies' underclothing made of satin or silk, elaborately embroidered with flowers and other coloured designs, fitting with glove-like tightness on lay figures, attracted large crowds. The most amusing exhibit in this section was that of a manufacturer of corsets and underclothing. This ingenious individual put up two life-size anatomical drawings to illustrate how tight-lacing displaced the internal organs; it was obvious that the effect shown by his lay figures could not be reproduced in life unless the wearer of the corsets pulled the laces with vigour and forgot all about the anatomical pictures. Indeed, it does seem that more attention should be paid to the development of fashions that tend to injure the health of the wearers. There were a good many such exhibits, and of all the things destroyed perhaps the clothes can best be spared. The illustrative lessons can be and should be reproduced.

Immediately beyond this portion of the Belgian Exhibition stood the British Section, where everything was unmercifully burnt up. As the flames rushed in from the Belgian section the first to be attacked were the chemical exhibits, and in the front was the very remarkable collection bearing the familiar name of Burroughs, Wellcome, and Co. Their little tabloids, however, had no chance, and their serums dried up in an instant. The rare salts from their research laboratory, such as emodin, that must have taken so much labour to prepare, the substances extracted with a view to the physiological standardising of drugs from leaves and common flowers, such as olive and red clover, &c., all blended in a few moments and were converted into mere ash. Things common or rare shared the same fate. Now the chemical exhibits were, on the whole, so remarkable that a special and carefully prepared catalogue was issued by an editorial subcommittee of the Chemical Industries Committee, which had for its president Sir Boverton Redwood. This publication, however, is not merely a catalogue. It contains short essays which sum up the actual technical position of the chief branches of the chemical trade, such as the alkali industries, gas and coal tar products, pharmaceutical preparations, disinfectants and antiseptics. Thus in the chapter on pharmacy we have a summary of the Pharmacy Acts and some account of an early Pharmacopœia issued in 1618. We are therefore able to observe that antitoxins and serums have replaced for the treatment of human ills the liver of quails, the fat of herons, the flesh of vipers, and the ashes of young storks. Eighteen pharmaceutical exhibitors had stands in this section, comprising many well-known firms too numerous for me to set out in detail. The section devoted to disinfectants also consisted of several stalls, the catalogue recognising that "the latest contribution to the literature of the standardisation of disinfectants is the report of THE LANCET Commissioners, published in that journal on the 13th, 20th, and 27th November, 1909." For general purposes the preference in disinfectants is given in the essay accompanying the catalogue to "certain coal-tar disinfectants, such as cofectant, cyllin, kerol, &c.," because they are non-toxic to the human subject, are readily prepared as emulsions, and "possess very much higher germicidal powers than phenols and the cresols." In illustration of this pronouncement Jeyes' Sanitary Compounds Company had a large stall to exhibit the cyllin disinfectant which is sold under the control of the Belgian Government. How this control is established was recently described.[1] Cyllin was also exhibited as soap or powder and ointments. The Sanitas Company had likewise a stall, at which were displayed the various wares which this enterprising business puts on the market. Edward Cook and Co., beside the great variety of soaps for which they are celebrated, exhibited the disinfectant called "cofectant," which showed up so well under the chemical and bacteriological tests which THE LANCET devised. It is now made up as a liquid, or in powder, or as an ointment, and also as lozenges. The latter promise to become popular as throat disinfectors for the prevention or cure of septic infection. By the side of the disinfectants there were many soap exhibits, and at the entrance of the British section there was an ornamental fountain made of Erasmic soap bubbles. This firm, at their great works on the banks of the Mersey, have succeeded in consuming their own smoke.

[1] See THE LANCET, Jan. 22nd, 1910.

Scientific Instruments and Food Products.

Next to the chemical section came the exhibit of mathematical and scientific instruments, some of them of great value and precision. The Cambridge Scientific Instrument Co., with their temperature-controlling appliances, and G. Cussons, Limited, with balancing apparatus designed by Professor W. E. Dalby, of the Imperial Technical College, had exhibits here. These, and some of our best makers' exhibits—barometers, optical instruments, compasses, Lord Kelvin's "wattsmeters," deflectors, and recorders—were all ruthlessly destroyed. A step further on came the mining exhibits and Home Office collection, which I have already described. On this side of the British Section, and for its whole length, there was hardly a single exhibit but was of some direct or indirect interest to the medical profession. Nor were the other parts at all devoid of professional interest. For instance, there was the food products section, which included many invalid foods and popular restoratives, such as Savory and Moore's peptonised milk, Mellin's infant food, and James Keiller and Sons' confections. This firm by the way, occupied an exceptional amount of space to display a model of Balmoral Castle, made of chocolate, huge nosegays made of sweets that imitated flowers in colour and shape, and walls built up with pots of the inevitable Dundee marmalade. Vegetarians visiting this section must have been delighted with Vavasseur and Co.'s exhibits, for they showed how cocoanuts could be utilised for making oil, syrup, and grease, all useful for vegetarian cooking. The Indian Tea Syndicate, in this section, drew vast crowds by the gratuitous distribution of afternoon tea. But for the thirsty—and in the hot weather an exhibition does engender thirst—there were also provided the syphons and capsules or "Prama" sparklets. Mixed with syrup, these produced a very cool, sparkling, and quite innocent temperance drink which could be obtained at any time of the day.

Travelling by Sea and by Land.

Another subject of general and also of specific interest relates to travelling. Even those who do not travel in the sense of going abroad or to distant places, but sleep in the same bed every night, are nevertheless constantly travelling short distances in tram or train. As an ever-increasing proportion of time is spent in travelling, the nature of the accommodation afforded is a matter of growing importance. The railway and tramway section graphically demonstrated that this accommodation has been very materially improved from time to time. The East Coast Route showed some beautiful models, pictures, and plans, and a very large contour, or raised, map of Scotland and the east coast. The photographs and other views of some of the health and pleasure resorts of Great Britain caused quite a sensation, and foreigners were often heard to exclaim in tones of surprise: "What, so there is some scenery in England!" Perhaps this revelation, combined with the comfort, not to say luxury, of some of the railway carriages exhibited, will induce more tourists from the continent to visit the beauty spots of Great Britain. Then there were the ships, from the small Channel boats to the leviathan *Mauretania*. All these beautiful models are destroyed and many cost several hundred pounds to make. There were models of the "Harwich to the Hook of Holland" or Antwerp steamers, oil paintings of Dover, Folkestone, and Calais with models of the steamers that cross to these ports in front of the pictures; and in contrast with these little boats were models of ocean-going steamers such as the Union Castle Mail Steamships for South Africa and the Atlantic liners. These were very beautiful and illustrated the history of shipbuilding, but what concerns intending passengers and what they can appreciate, however ignorant of technicalities, is a full-size model of the interior of a cabin. This was shown by the Cunard Company. Opening the door of what from the outside appeared as a small hut, the inside was a faithful reproduction of a state room. Here the contrivances for serving meals to a patient unable to rise were shown. All the comforts and ingenious devices to obtain the utmost convenience could be examined, including the three windows—the first in transparent glass, the second in ground-glass (through which it is not possible to see but which

allows the light to penetrate), and the third of a wooden *persienne* that keeps out the light but lets the air through. The luxurious toilet arrangements with a constant service of hot and cold water, the combination of comfort with artistic decorations, all seemed to suggest that an ocean journey need not be an ordeal but a pleasant experience. But all this has gone with many, many other things, some that cannot possibly be replaced. Yet there is to be a revival. A new British section is to be rapidly brought into existence. Perhaps no better wish can be expressed than to hope that the reconstructed section will equal in merit that which the flames have destroyed.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Hospital Isolation.

THE Gorton district is to be amalgamated with Manchester, and we shall therefore have no more separate health reports from Mr. A. W. Martin, its present medical officer. In his last report he deals chiefly with the hospital isolation of infectious diseases. He would, for instance, only send severe cases of scarlet fever to the hospital, leaving the mild cases at home—a course he has adopted for the last 20 years. He says that hospital isolation appears to have little or no effect on the attack-rate of the community, but the great decline in the death-rate is in all probability due to the influence of the hospitals. As there are varieties among plants and animals, so there seem to be varieties differing in degrees of malignancy among disease germs, and in consequence of nearly every case of the malignant type being removed to hospital for isolation and treatment there has been the gradual elimination of the malignant type, till it has now become practically extinct, the mild type alone prevailing. He believes that if the same system were adopted with measles and whooping-cough, all the severe cases being removed to hospital for isolation and treatment, while the mild cases were treated at home, there would be in all likelihood a similar lowering of the death-rate in these diseases. It would be interesting and important to know if, and where, similar methods have been adopted, and with what results to the death-rate.

The Prevention of a Cholera Invasion.

With all the benefits the Ship Canal has brought to Manchester, there is the drawback that she is rendered more vulnerable as to the importation of infectious disease. But a very careful watch is kept, so that even if the port sanitary authority had not received a letter from the Local Government Board pointing out that cholera is epidemic at Cronstadt and other Russian ports, it may safely be assumed that all precautions would be taken against the admission of such a foe. The Manchester authority pays a subsidy to the Liverpool authority, which takes care that no ship is allowed to enter the port of Manchester without the certificate of the port medical officer. Mr. W. F. Dearden, the Manchester port medical officer, finds some difficulty in getting the masters of ships thoroughly to understand their obligations, and he has therefore drawn out a synopsis of the regulations issued by the Local Government Board as to cholera, plague, and yellow fever. Copies of this are to be distributed to the masters of ships trading with infected ports.

Health of Cheshire.

It is cheering to learn from Dr. Meredith Young's report as to the health of Cheshire, that the death-rate for the county was 12·72 per 1000, and that the infantile mortality was not more than 99 3 per 1000 registered births. Moreover, the death-rate from pulmonary phthisis was the lowest for the county since 1892, and as this decrease has been fairly gradual and steady, there is some hope of its continuance provided, says Dr. Young, "that there is no relaxation in the public and private efforts made on all hands for the control of this provedly preventable disease." There is a steady and persistent decline in the birth-rate, especially among the comparatively well-to-do and educated classes "This," says Dr. Young, "is due to causes which are far from unavoidable, and is fraught with very serious consequences to the future of the Empire." He finds that vaccination is still carried out in a varying, but on the whole a hopeful, percentage of cases.

The Public Health of Manchester.

As in the case of Cheshire, the medical officer of health of Manchester, Dr. J. Niven, also tells of a falling birth-rate, 27·52 per 1000, the lowest on record. It is true that the same may be said of the death-rate of 17·70 per 1000, while the infantile mortality is also considerably lower than in any previous year. This is attributed to various factors, "to the increased attention given to the welfare of mother and infant by medical practitioners, the excellent work done by the department of elementary education, the increasing efficiency of the health visitors, the growing influence of the Mothers' Guild, the improvement of the milk-supply, the work already done under the Children Act—halting and imperfect as it has been,—the guidance of the district nurses, the careful instruction imparted to midwives, and the baby-shows, have all contributed." The inclusion of baby-shows in this category of good influences has the charm of novelty. The returns show a further reduction in the proportion of tuberculous milk brought into the city during 1909. The Manchester township, as it always has done, holds the worst place as regards public health. In it "tuberculous mortality increases up to the most advanced periods of life," while in north and south Manchester it is declining. This is largely ascribed to life in the lodging-houses which abound in the old Manchester township. And this is considered by Dr. Niven "the hardest nut of all to crack in the prevention of tuberculosis." He has a scheme for the methodical fighting of this disease of which more will probably be heard.

Sept. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Crusade against Phthisis: Important Liverpool Proposal.

RECENTLY the port sanitary and hospitals committee of the city council appointed a special subcommittee to consider the best method of dealing with tuberculosis in the district. The subcommittee has now reported on the subject to the hospitals committee, which has approved of the report, including the following recommendations: "That the health committee be requested to take into consideration the advisability of appointing an assistant to the medical officer of health to undertake the following duties: (1) to visit the homes of persons suffering from tuberculosis, who have been in-patients at Fazakerley Hospital, or notified under the Order of the Local Government Board, at their homes, with a view to ascertain that medical instructions are being followed, and to remind or advise the patient when necessary as to the precautions to be observed; (2) to note and report to the medical officer of health any home conditions likely to influence the disease, either in regard to the patient or to those living with him; (3) to keep systematic records of visits or re-visits, and of the conditions found, and submit them to the medical officer of health, and to carry out any other kindred duty or investigation which the health committee may direct." The health committee was further requested to take into consideration the advisability of undertaking payment of the cost of the examination of sputum for tubercle bacilli made by the city bacteriologist, at the request of a medical practitioner, in all necessary cases where the patient is not being treated in a public institution and cannot afford to pay for the examination. These recommendations having been considered by the health committee, that body resolved, in the event of their approval by the city council, to advertise for an assistant to the medical officer of health at a salary of £250 per annum, increasing in 12 months to £300 per annum.

Proposed Liverpool Memorial to the late Miss Florence Nightingale.

I understand that it is intended to establish in Liverpool a memorial to the late Miss Florence Nightingale of a kind befitting the character of that noble lady. It is proposed that the memorial shall be in connexion with the work of the Liverpool Queen Victoria District Nursing Association, which was founded by the late Mr. William Rathbone, with the counsel and encouragement of Miss Nightingale. It is hoped that it may take the form of a large and much-needed development

of that eminently practical and increasingly useful work. A definite scheme will be shortly delineated.

Corporation Infectious Hospitals.

From the annual report of the medical officer of health (Dr. E. W. Hope) upon the city hospitals it is to be noted that these institutions are being well administered and are doing a most useful work. The question of the permanent closure or reduction of the number of beds at Parkhill Hospital has from time to time engaged the attention of the hospitals committee during the past few years, and although it was not considered safe to close the hospital entirely, a considerable number of the beds have been put out of commission—viz., 200—and the staff has been correspondingly reduced. The number of beds retained in use at the hospital during the year was 235. At present the number of beds available in the various hospitals is as follows: City hospital north, 162; City hospital south, 100; City hospital east, 152; City hospital, Parkhill, 235; City hospital, Fazakerley, with annexe, 510; total, 1159. No fewer than 6625 patients had been treated within their walls, the great majority of these being cases of scarlet fever. The advantages of the hospitals are now so fully recognised by the public that the removal to hospital of their sick dependents is often insisted on and claimed as a right; whereas in former years, in cases similarly circumstanced, removal would never have been sought, and would even have been resisted. The report contains elaborate tables and diagrams illustrating the variety and nature of the diseases treated in the hospitals.

Small-pox at New Ferry.

Another outbreak of small-pox has occurred at New Ferry, near Birkenhead, in the last few days. A man and his wife resident in New Ferry-lane have been attacked. The man, feeling unwell at his employment, was sent home, and the medical man who was called in diagnosed the case as one of small-pox. The patient rapidly becoming worse, died on Sept. 1st. His wife also contracted the disease in a milder form, and was removed to the small-pox hospital at Greasby. The children, five in number, are now being detained at the isolation hospital at Pensby. The acting medical officer of health of the district is of opinion that these two cases had no relation to the previous outbreak a few months ago.

Sept. 6th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Appeal Against a Closing Order under the Housing and Town Planning, &c., Act.

WHEN a closing order has been made by a local authority under section 17 of the Housing, Town Planning, &c., Act, the owner of the house concerned may appeal to the Local Government Board against the order, but before dismissing such appeal the Board is required to hold a public local inquiry. The first of such inquiries in Wales was held in Aberdare a few weeks ago, and the action of the district council has been upheld. The houses which were the subject of the inquiry were 11 in number and were built in 1851. In 1894 they were purchased by the present owner for £650, who let them at a rental of 19*s.* per lunar month. The conditions which led the medical officer of health, Dr. Morgan J. Rees, to report them as being unfit for human habitation referred principally to a lack of through ventilation, unpaved areas, and unsatisfactory flooring.

Death of Henry Collen Ensor, M.R.C.S. Eng., L.S.A.

The medical profession, not only of Cardiff, but of a wide district surrounding, has sustained a severe loss through the death on August 23rd of Mr. H. C. Ensor. He was operated on successfully for nasal obstruction, but died shortly after the conclusion of the operation. He received his medical education at Guy's Hospital and, after acting as resident surgeon to the Birmingham and Midland Eye Hospital, commenced practice as an ophthalmic surgeon in Cardiff. For several years he was ophthalmic surgeon to the Newport Hospital, and was subsequently appointed to succeed Dr. Tatham Thompson as ophthalmic surgeon to the Cardiff Infirmary. He held also a similar position in the Cardiff Provident Dispensary, the Seamen's Hospital, the Mountain Ash Cottage Hospital, and the Cardiff Deaf and Dumb Institute. Of an unassuming and somewhat retiring disposition, Ensor nevertheless secured the entire confidence of his patients, a fact which was due in no small measure to the thoroughness which characterised all his work, for of him it may truly be said that he had "an infinite capacity for taking pains." He was thoroughly imbued with the spirit of Freemasonry and was held in the highest esteem by members of the craft. He was a Past Master of the Bute Lodge in Cardiff and had held high rank in Provincial Grand Lodge. His funeral was attended by many of his medical colleagues, and he was accorded the customary simple Masonic rites by the large number of Freemasons who were present. He leaves a widow and three children to mourn their loss.

Infantile Mortality in the Rhondda Valleys.

In his report to the Local Government Board on infant and child mortality Dr. A. Newsholme included the Rhondda urban district council among those sanitary authorities who, as tested by excess of infant mortality, are most urgently called upon to perform more completely their primary duties. For this reason the section upon infantile mortality in the recently issued annual report of Dr. J. D. Jenkins, medical officer of health of the Rhondda, is of exceptional interest. Dr. Jenkins is able to report a very satisfactory decrease in the infantile mortality rate for 1909 when it was 130 per 1000 births compared with an average rate in the preceding ten years of 190. In England and Wales the rates during the same periods were 109 and 138 respectively. Among the recommendations made by Dr. Newsholme with a view of securing a reduction in the number of infant deaths, emphasis was laid upon the necessity for removing general insanitary conditions, and especially for abolishing dry systems of excrement disposal and substituting water-closets. For many years past the prevailing system in the Rhondda has been that of water-carriage, and among the 25,000 houses there are only 200 which are not provided with water-closets. The scavenging of the district is supervised by the six sanitary inspectors and appears to be carried out satisfactorily, the daily removal of household refuse preventing the accumulation of decomposing material in the proximity of dwellings. Early in 1909 the district council decided to adopt the Notification of Births Act, 1907, and later in the year appointed two health visitors to whom were allotted those portions of the district which in recent years had shown the highest infantile mortality rates. They visit the houses at which births have taken place immediately after the medical men or midwives have ceased to attend and offer advice to the mothers not only upon the upbringing of the baby, but also upon such matters as the storage of food, general cleanliness, ventilation, and such other subjects as may be considered to have an influence upon the general welfare of the child in common with that of the other inmates of the house. They also visit those houses in which the death has occurred of a child under one year old. Dr. Jenkins considers that the latter visits may lead to a better understanding on the part of parents of conditions which may have led to the fatality investigated, and which may have been preventable. Already there are indications of the good resulting from the services of the health visitors, and the council will, no doubt, realise the wisdom of increasing their number, so that the whole of the urban district may have the advantage of these officials.

Death of Howard David Reynolds, M.R.C.S. Eng., L.R.C.P. Edin.

Mr. H. D. Reynolds, who died at his residence, Kensington House, Pembroke Dock, South Wales, at the age of 68 years, on August 21st, was medical officer of health of the Pembroke boroughs for nearly 30 years. He was J.P. for Pembroke, surgeon to the Pembroke Infirmary, and consulting surgeon to Haverfordwest Infirmary, and in addition held many other appointments. He qualified in 1865 M.R.C.S. Eng. and later took the L.R.C.P. Edin. and L.M.

Sept. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Medical Inspector of the Counties of Roxburgh and Selkirk.

AT a meeting of the medical inspection committee of the educational committees of the counties of Roxburgh and Selkirk, held at Newtown, St. Boswells, Dr. Alexander Gibb Glass was appointed medical inspector of schools of the united counties. Dr. Glass is a native of Grantown-on-Spey,

and is at present medical officer of health and school medical officer of the burgh of Burnley.

Rev. William Jeffrey, LL.D., L.R.C.P. Edin., L.F.P.S. Glasg.

On August 25th there passed away one who filled a conspicuous position in the profession of medicine, and who was a man of many and varied interests. In these days of stress and strain it is enough for the ordinary man to equip himself efficiently for a single profession. William Jeffrey was both a medical practitioner and a minister of the Gospel, and within six weeks of his lamented death in his sixty-fourth year he was actively engaged in the practice of both professions. As pastor of the High Church, Kilsyth, he ministered to the spiritual needs of a large congregation with peculiar acceptance, and as a physician he was always at the call of those who were not in a position to afford the ordinary medical advice. Though he gave his services gratuitously and gladly to the poor of all denominations (and of none), he was ever scrupulously careful not to encroach on the legitimate province of his fellow practitioners. He refused his aid where he had reason to believe that the patient was able to pay, and his relations with his fellow practitioners were of the most cordial nature. For upwards of 27 years he acted as consulting physician to the Glasgow Central Dispensary, and had long been the senior physician of that institution. Of commanding presence and richly gifted by nature with all the qualities which go to make up personal charm, Dr. Jeffrey inspired absolute confidence in his patients, while the loveable nature of the man won in unstinted measure the affection of all with whom he came in contact. Astute to detect malingering he was one of the shrewdest as well as one of the kindest of men. He was equally at home with his rich parishioner and his needy patient, and many a home will be the poorer, and many a heart will be the sadder, by the departure of one of whom it can be said with all truth that "he went about doing good."

Sanitary Congress at Elgin.

The thirty-sixth annual Congress of the Incorporated Sanitary Association of Scotland was opened at Elgin on Sept. 1st. Lord Provost Wilson welcomed the delegates, and Mr. Robert Lindsay (Midlothian), President of the Association, delivered his presidential address, entitled "The March of Sanitary Science." Dr. Matthew Hay contributed an important paper on Human Carriers of Typhoid and other Zymotic Diseases. On the second day Dr. William Robertson, medical officer of health of Leith, read a paper on Practical Points in the Control of Pulmonary Tuberculosis, which was very keenly discussed. The concluding paper was given by Baillie Fraser (Inverness), convener of the public health committee, the subject being Social Problems in Relation to Public Health. In it he strongly advocated the State control of parentage and the labour colony treatment of criminals and inefficients.

Aberdeen Parish Council Medical Officership.

Only one application has, it is understood, been received by the Aberdeen parish council in reply to the advertisement by that body for a medical officer for the Oldmill Poorhouse. It is probable, therefore, that the whole matter will be reconsidered by the council at its next monthly meeting.

Medical Inspection Difficulty in Sutherland and Caithness.

The Sutherland county education committee have expressed the opinion that the recent arrangement of a medical officer of health of the combined counties of Caithness and Sutherland should be terminated and an officer appointed for the double duties of medical officer of health and medical inspector of school children, and the county council of Sutherland acquiesced in this proposal. The county council of Caithness, however, refused to agree to this proposal and proceeded to a scheme for the appointment of a medical inspector for Caithness alone, apart from the medical officer of health, and thus an unprecedented state of affairs has arisen. The medical officer is the connecting link between these two counties, and the action of the county committee of Caithness also includes the alternative arrangement of the present combined counties' officer acting as superintendent in Sutherland over the local practitioners, because the county council of Caithness will not agree to the increase of duties in Sutherland, as they have not been scheduled. The local authorities of Sutherland in this matter are considering the advisability of laying the whole matter before the Local Government Board, as after many months of negotiation no satisfactory arrangement has yet been made.

Sept. 6th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Emigration Statistics.

IN 1909 Irish emigration exceeded the natural increase of population—that is, the excess of births over deaths—by 889. The respective figures are: natural increase of population, 27,786; emigration, 28,675. In 1909 the numbers emigrating were 5380 more than in 1908 (23,295). No explanation of this state of affairs is apparent, but it is something to be thankful for that the numbers emigrating in 1909 from Ireland were less than the average of the preceding decade, which was 37,141.

Drunkenness in Ireland.

The statistics just issued from the Government offices show that in Ireland during the last decade cases of drunkenness have diminished from 98,401 to 68,748. During 1909 the cases were 5519 fewer—that is, a much larger decrease than in any previous 12 months since 1903. Further, there is a decrease of 393 in the cases of serious crime last year as compared with 1908, but an increase of 455 as compared with 1907. Waterford is the most drunken town in Ireland for its size, as more than three persons per 100 were charged, while in Dublin the proportion was less than one.

Suicide in the Richmond Asylum.

The city coroner held an inquest on Sept. 5th into the circumstances of the death of a patient in the Richmond Lunatic Asylum. The unfortunate man, who was known to be of suicidal tendency, was missed at 2 P.M., and on search being made his body was discovered hanging by a muffler to a heating pipe. He had apparently been dead for several hours, and the absence of food in the stomach suggested that he had not breakfasted. The coroner observed that no check of the patients had been taken, or the man's absence would have been discovered earlier, but the jury found that proper care had been taken.

Royal Institute of Public Health.

The corporation of Dublin has resolved to invite the Royal Institute of Public Health to hold its annual congress next year in Dublin.

The Alleged Sweating in Belfast.

The report of the medical officer of health of Belfast containing allegations as to sweating in Belfast came before the city council on Sept. 2nd, but the Lord Mayor ruled that the question of sweating as such was outside the province of the corporation and could only be discussed by it in strict reference to the question of sanitation. He pointed out that the corporation could do nothing to put down sweating, and that there was no more ground for it to make a pronouncement in regard to it than that it should declare its views on tariff reform or on the licensing laws. The chairman of the public health committee said his committee had met that morning, and as a consequence he would ask the corporation to omit the portions of the minute containing the part of the medical officer of health's report dealing with home workers. A deputation from the Belfast trades council appeared before the city council urging that the corporation should ask that the branches of trades pilloried in the health report should be scheduled as "sweated," but the Lord Mayor ruled that the deputation had not asked the corporation to do anything that it was within its power to do. The trades council have decided to hold a public meeting in opposition to "sweating" in the various trades, and especially in reference to what was mentioned in the health report of Belfast for 1909.

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The Rice Trade and Beri-Beri.

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has lately been trying to obtain the services of pensioned officers of the Indian Army, but some doubt may reasonably be felt as to whether the latter will be found willing to discharge the exceedingly distasteful duties which not infrequently fall to the lot of an asylum attendant, while a pension earned for effective military service would hardly seem, on the face of it, to afford a sufficient guarantee of a man's suitability for dealing with the insane. Enthusiasm may, however, reasonably greet the suggestion of Colonel T. E. L. Bate, I.M.S., Inspector-General of the Punjab Civil Hospitals, that a few of the brethren of the Franciscan Order should be induced to undertake the supervision of the attendants. The admirable work carried on by the Franciscan nuns in the female portion of the asylum has claimed the warm appreciation of Sir Louis Dane, and there can be little doubt that the presence of the Brothers of the Order in the male asylum would be calculated to exercise a like sympathetic and wholesome influence.

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The Conference on Tropical Diseases at Manila.

Major A. Hooton, I.M.S., who attended the recent meetings of the Far Eastern Association of Tropical Diseases at Manila, has submitted a long report to the Government of India. In dealing with tubercle and leprosy he reports that an active crusade against tubercle has been started; the steps taken up to the present include instruction in schools, special out-patients' departments for tuberculosis cases in the large hospitals, attendance of patients at their homes by nurses, and open-air treatment in special camps conveniently placed so that patients able to do so can carry on their work. It is proposed shortly to establish a hospital for hopeless cases, with the principal object of minimising the danger of infection of the healthy, and a home in the mountains for incipient cases, to grant free sites, and if necessary building materials for airy dwellings to be constructed on a definite plan for sufferers not otherwise provided for, and to form a league for the dissemination of a knowledge of the proper measures for prophylaxis. As in many parts of India, in the Philippines tuberculosis is very prevalent and fatal. With reference to leprosy, it is noted that the segregation of lepers is perhaps the most striking of the sanitary reforms that have been inaugurated by the American Government in the Philippines, though great advances have been made in vaccination and other directions. It is now about five years ago since the initial steps were taken. An attempt was first made to explain the etiology of the disease to sufferers and their friends, and prominent Filipinos were induced to assist in the education of their companions with this end in view. Then gradually a small number of lepers were persuaded to take up their residence in the buildings prepared for them in the island of Culion. Every available means was adopted to make these people contented and comfortable, so that the disinclination of those still at large to join them might be overcome if possible without resort to force. At first some opposition was met with, but after a comparatively short space of time the people became more accustomed to the idea, and it was thought safe to progress a step further. No serious difficulty resulted and for the last three years throughout the group, with the exception of the island of Mindanao, the present leprosy law has been in force. This requires the civil authorities to deliver to the director of health, when called upon to do so, all persons afflicted or suspected of being afflicted with leprosy, and empowers the director of health to segregate such persons at the leper colony at Culion. Before finally segregating any individuals, however, the director of health must, if required by the patient or his friends, demonstrate the presence of the leprosy, but this clause is very seldom taken advantage of, and in no case has a repeated examination conducted at the laboratory at Manila failed to produce the requisite evidence. An additional check is also provided by the fact that the original diagnosis is made by a travelling committee of three medical men, who examine suspected persons collected at various appointed stations on the coast and assemble sufferers on board the steamer, which eventually transports them to their destinations. As regards the arrangements, the leper residents are allowed to write letters and to receive visits periodically from their friends, but the letters are disinfected, and friends and relations must live in quarters provided for them on an adjacent island. The results of segregation have more than justified the trouble and expense involved. A census of lepers in the islands (excepting Mindanao) showed 4000 at the commencement of the operations, and this number, owing to the large death-rate amongst the patients and the reduction of infection of healthy persons, has now fallen to 2300. It is believed that very few lepers remain at large at the present time.

August 1st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

A Consumption Crusade.

A PUBLIC meeting was held in Sydney on June 29th to institute a "crusade" against consumption. Sir Philip Sydney Jones, M.D. Lond., presided, and the meeting was under the auspices of the newly-formed society with the title of "National Association for Prevention and Cure of Consumption." Resolutions providing for the opening of a national fund, for an appeal to the Prime Minister of the Commonwealth and the State Premiers and public generally, were carried. Sir P. S. Jones delivered an address on Consumption. Communications were opened with other principal Australian cities with a view to extending the project. It is not likely the matter will be very warmly taken up in Victoria, where the Board of Public Health has already been doing what was possible, and the Australian Health Society has for years carried on a programme of popular health lectures and the distribution of information by leaflets and pamphlets in that State, and of late years has paid special attention to the consumption problem.

Radium.

A proposal was recently made in Sydney that the Government should institute a "Radium Bank" by providing a supply of radium which would be hired by practitioners as they wanted it. The proposal has taken practical form in another way, the Sydney Hospital having opened a subscription list to provide that institution with an adequate radium outfit. In an interview with a representative of the *Sydney Daily Telegraph* Professor Anderson Stuart strongly urged the public to subscribe to a fund for providing radium at all public hospitals.

Bush Nursing.

A special meeting of the Victorian branch of the British Medical Association was held to hear an outline of Lady Dudley's scheme for "bush nurses," which was communicated by Mr. Boulton of London. The scheme at the outset was said to be intended for the organisation of district nursing throughout Australia and its gradual extension to outlying districts. This was the plan that had succeeded in Great Britain and Canada, and Australia presented less difficulty than the latter in that there were already existent small country hospitals which could be utilised as bases for beginning work. The proposed organisation consisted of: 1. A federal committee, whose duty it was to see that conditions were standardised all over Australia, and which would appoint nursing inspectors to see that the scheme was working smoothly. 2. Each State would have a central committee, whose duty was to see that nurses were available and adequately trained. Every hospital-trained nurse would have to undergo six months' experience of district nursing in the city before being sent out, and would also require to be

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The Secretary of State has sanctioned the construction of a Medical College and Hospital at Lucknow, at an estimated cost of Rs.32,69,950. The foundation stone of this work was laid by His Majesty the King on the occasion of his visit to Lucknow in December, 1905, as Prince of Wales, and the time since then has been employed in elaborating and completing the full details of the project. The designs for the building are in the Indo-Saracenic style, the work of Colonel Sir Swinton Jacob, K.C.I.E. The College part of the scheme, the cost of which was met from private subscriptions, was commenced last year, and these buildings are far advanced. The complete work will now be put in hand. The site for the hospital and other buildings, a commanding and central one, has been admirably chosen; that the buildings have been well designed the name of Sir Swinton Jacob is sufficient guarantee. The provision of an up-to-date hospital and college at a place like Lucknow was necessary and it is understood that no effort will be spared to push the scheme to completion.

The Conference on Tropical Diseases at Manila.

Major A. Hooton, I.M.S., who attended the recent meetings of the Far Eastern Association of Tropical Diseases at Manila, has submitted a long report to the Government of India. In dealing with tubercle and leprosy he reports that an active crusade against tubercle has been started; the steps taken up to the present include instruction in schools, special out-patients' departments for tuberculosis cases in the large hospitals, attendance of patients at their homes by nurses, and open-air treatment in special camps conveniently placed so that patients able to do so can carry on their work. It is proposed shortly to establish a hospital for hopeless cases, with the principal object of minimising the danger of infection of the healthy, and a home in the mountains for incipient cases, to grant free sites, and if necessary building materials for airy dwellings to be constructed on a definite plan for sufferers not otherwise provided for, and to form a league for the dissemination of a knowledge of the proper measures for prophylaxis. As in many parts of India, in the Philippines tuberculosis is very prevalent and fatal. With reference to leprosy, it is noted that the segregation of lepers is perhaps the most striking of the sanitary reforms that have been inaugurated by the American Government in the Philippines, though great advances have been made in vaccination and other directions. It is now about five years ago since the initial steps were taken. An attempt was first made to explain the etiology of the disease to sufferers and their friends, and prominent Filipinos were induced to assist in the education of their companions with this end in view. Then gradually a small number of lepers were persuaded to take up their residence in the buildings prepared for them in the island of Culion. Every available means was adopted to make these people contented and comfortable, so that the disinclination of those still at large to join them might be overcome if possible without resort to force. At first some opposition was met with, but after a comparatively short space of time the people became more accustomed to the idea, and it was thought safe to progress a step further. No serious difficulty resulted and for the last three years throughout the group, with the exception of the island of Mindanao, the present leprosy law has been in force. This requires the civil authorities to deliver to the director of health, when called upon to do so, all persons afflicted or suspected of being afflicted with leprosy, and empowers the director of health to segregate such persons at the leper colony at Culion. Before finally segregating any individuals, however, the director of health must, if required by the patient or his friends, demonstrate the presence of the leprosy, but this clause is very seldom taken advantage of, and in no case has a repeated examination conducted at the laboratory at Manila failed to produce the requisite evidence. An additional check is also provided by the fact that the original diagnosis is made by a travelling committee of three medical men, who examine suspected persons collected at various appointed stations on the coast and assemble sufferers on board the steamer, which eventually transports them to their destinations. As regards the arrangements, the leper residents are allowed to write letters and to receive visits periodically from their friends, but the letters are disinfected, and friends and relations must live in quarters provided for them on an adjacent island. The results of segregation have more than justified the trouble and expense involved. A census of lepers in the islands (excepting Mindanao) showed 4000 at the commencement of the operations, and this number, owing to the large death-rate amongst the patients and the reduction of infection of healthy persons, has now fallen to 2300. It is believed that very few lepers remain at large at the present time.

August 1st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

A Consumption Crusade.

A PUBLIC meeting was held in Sydney on June 29th to institute a "crusade" against consumption. Sir Philip Sydney Jones, M.D. Lond., presided, and the meeting was under the auspices of the newly-formed society with the title of "National Association for Prevention and Cure of Consumption." Resolutions providing for the opening of a national fund, for an appeal to the Prime Minister of the Commonwealth and the State Premiers and public generally, were carried. Sir P. S. Jones delivered an address on Consumption. Communications were opened with other principal Australian cities with a view to extending the project. It is not likely the matter will be very warmly taken up in Victoria, where the Board of Public Health has already been doing what was possible, and the Australian Health Society has for years carried on a programme of popular health lectures and the distribution of information by leaflets and pamphlets in that State, and of late years has paid special attention to the consumption problem.

Radium.

A proposal was recently made in Sydney that the Government should institute a "Radium Bank" by providing a supply of radium which would be hired by practitioners as they wanted it. The proposal has taken practical form in another way, the Sydney Hospital having opened a subscription list to provide that institution with an adequate radium outfit. In an interview with a representative of the *Sydney Daily Telegraph* Professor Anderson Stuart strongly urged the public to subscribe to a fund for providing radium at all public hospitals.

Bush Nursing.

A special meeting of the Victorian branch of the British Medical Association was held to hear an outline of Lady Dudley's scheme for "bush nurses," which was communicated by Mr. Boulton of London. The scheme at the outset was said to be intended for the organisation of district nursing throughout Australia and its gradual extension to outlying districts. This was the plan that had succeeded in Great Britain and Canada, and Australia presented less difficulty than the latter in that there were already existent small country hospitals which could be utilised as bases for beginning work. The proposed organisation consisted of: 1. A federal committee, whose duty it was to see that conditions were standardised all over Australia, and which would appoint nursing inspectors to see that the scheme was working smoothly. 2. Each State would have a central committee, whose duty was to see that nurses were available and adequately trained. Every hospital-trained nurse would have to undergo six months' experience of district nursing in the city before being sent out, and would also require to be

proficient in maternity work. The State committee would also see that payment was adequate and that no trespass on the function of the doctor was permitted. 3. In each town there would be a local committee, whose duty would be to see that the nurse was properly housed, and to provide means of transport. It would also arrange all financial matters, and the nurse would receive no money from patients at all. The local bodies would be represented on the State committees, and from these the federal council would be elected. It was not intended to thrust nurses on the people. Each town or district could apply at its own discretion, and the nurse, if not fully occupied, might possibly lecture on matters of hygiene in the local schools. The meeting received the address sympathetically, but a good deal of doubt was expressed as to the necessity for anything of the kind. Public enthusiasm has been somewhat lacking, especially in Victoria. New South Wales has shown more energy, and already a considerable sum has been raised by subscription and other means. The conditions in Australia are so wholly different from Great Britain and Canada that outside the cities there are practically no people that could be termed unable to pay for skilled nursing or unable to have their sick removed to hospital. Possibly in parts of Queensland and Tasmania the provision of nurses in outlying districts would have some real service.

Death of a Medical Man.

The death of Mr. L. L. Smith occurred in Melbourne at the age of 80 years. Mr. Smith held the qualification of L.S.A. Lond., and although the adoption of an advertising practice placed him at variance with the medical profession he played a prominent part in the public life of Victoria. He was elected to the Victorian Parliament on nine occasions and held office in more than one Cabinet. He was a commissioner for the last International Exhibition held in Melbourne and a trustee of the building. He was a great patron of the turf and owned successful racehorses. He took a great interest in viticulture and was the first to produce a Victorian champagne. Altogether he was one of the most familiar figures in Melbourne streets for the last half century and was very popular personally with his intimates.

Melbourne Hospital.

The terms of the gift to the Melbourne Hospital for rebuilding purposes required the committee to commence the new building within 18 months. This period has elapsed, but the trustees of the Wilson estate have extended the time. Plans have been approved by the medical and surgical staff, and the quantities for the first section are now being made out. The foundation-stone will be laid on Oct. 17th. The annual report for the year just closed shows that the financial position of the institution is unsatisfactory.

Talbot Milk Institute.

The committee of this institute appeal for funds, and claim that their operations have resulted in a large reduction of infant mortality in Melbourne and suburbs. The evidence is not very convincing from the smallness of the field occupied. A sum of £3000 is required to prevent financial strain. The work has been practically only two years in operation.

August 2nd.

Obituary.

PAOLO MANTEGAZZA.

A PICTURESQUE figure has disappeared from the public life of Italy in Paolo Mantegazza, who died on Sunday, August 28th, at his villa on the Gulf of Spezia in his seventy-ninth year.

Of Lombard parentage, he was born at Monza on Oct. 31st, 1831, the son of Federico Mantegazza, a distinguished judge, and of the Contessa Laura Soliera, both, father and mother, remarkable for their mental culture and their devotion to their country's good. Designed for the medical career, young Paolo was enrolled as a student at the University of Pisa and subsequently at that of Pavia, where he graduated Doctor of Medicine with honours. A monograph on spontaneous generation presented to the Lombard Academy of Science and Literature gave earnest, thus early, of his contributions to the higher nature-study, in prosecution of which he made a round of the principal medical schools of France, Germany, Holland, Belgium, England, and Scotland. At Paris, in 1854, he published his "Fisiologia del Piacere," or "Physiology of Pleasure," a work addressed to the non-professional world, by which it was read with avidity not only in the original but in four other European languages. Passionately fond of travel and of nature-study under every clime, he went to South America, making Buenos Aires his headquarters, where he entered on practice as a consultant in medicine. Thence he passed to the Argentine Republic and married a creole, who coöperated with him in promoting the interests of that budding State, now more than realising the bright future he predicted for it. In 1858 he returned to his native Italy to organise a contingent of emigrants by way of reinforcing the Italian element in the Argentina, but the events of 1859 intervened, and his patriotism found an appropriate outlet nearer home. His country's "Risorgimento"—in other words, its unity and independence—drew him into the patriotic ranks, headed by King Victor Emanuel, and the valour he had displayed as a student when in 1848 he defended Milan on the barricades during the memorable Cinque Giorni (Five Days) found congenial vent in the campaign that began with Magenta and ended at Solferino. Fresh from the stricken field, he became assistant surgeon in the Military Hospital of Sant' Ambrogio at Milan, whence, now in his twenty-ninth year, he passed to his *alma mater* Pavia as professor of general pathology—a post he gained by "comparative trial" over the heads of many formidable competitors. In this chair, which he filled with much acceptance, he took an initiative, afterwards followed not in Italy only but in many other seats of learning in Europe, that of founding a laboratory for experimental pathology—a step quite in keeping with his ardent ambition to bring nature-study into ever closer relation with medicine, as its most useful auxiliary. In 1869 he was called to fill the chair of Anthropology in the Istituto di Studi Superiori at Florence, in acknowledgment of his proficiency in a science then struggling for existence, a science which he was among the first to appreciate in its bearings on social rehabilitation. To him indeed Italy owes her Museo Antropologico, whose seat is at Florence, as she is also his debtor for the foundation of the Società Antropologica Italiana, in connexion with which he also started the *Archivio di Antropologia ed Etnologia*—a periodical which he enriched with many contributions, which in turn evoked others on the same theme, mainly from pupils hardly less proficient and enthusiastic than their teacher.

All this time he was a strenuous advocate and promoter of State hygiene, of which his compatriots call him the "Apostle," enlightening the people as to the duty they owe to themselves and thereby to their fellow-citizens in maintaining the "*corpus sanum*" as the fitting receptacle of the "*mens sana*." With characteristic philanthropy and eloquence he threw wide the storeroom of his studies and his experience to the general reader, illustrating the elementary truths of physiology by effective demonstrations of the good that rewards their observance and the harm entailed by their neglect, following, indeed, on the lines of Dr. Andrew Combe in the England of the early nineteenth century. His "Elementi d'Igiene," many times reprinted and brought up to date, has still an immense popularity, while his "Almanacchi Igienici"—remembrancers, addressed year by year to the "man in the street," of the rules to be complied with by the individual and the community, if both, one and other, are to maintain health and moral as well as physical well-being—were a "departure" amply justified by the good they wrought. Not only in his capacity as an academic teacher but as Member of Parliament from 1865 to 1876, and as Senator of the kingdom—an honour afterwards conferred on him—he kept the "hygienic crusade" in constant evidence before the Italian public, professional and lay, municipal and legislative. Working, if not in conjunction, at least in harmony with a kindred spirit, Lombroso, he instituted in 1902 at Florence, as an adjunct to his Museo Nazionale d'Antropologia, a "Laboratorio Antropometrico"—on which occasion he received the most gratifying proofs of sympathy and support, not the least being the presentation to him, from the ladies of Italy and of other European countries, of a finely illuminated "pergamena" and an artistically-mounted gold pen, in testimony of their gratitude for his exertions in behalf of the "Italy that is to be." Among the signatories were such eminent ornaments of their

sex as Adelaide Ristori, Gemma Bellincioni, Ada Negri, Matilda Serao, Madame Zola, and Madame Rostand, and the speech *de circonstance* eloquently delivered by the Professoressa Emma Parodi evoked from the veteran surgeon and nature-student a reply in his happiest vein. This was indeed the "swan-song" of Paolo Mantegazza. Not long thereafter his health, robust as he was, began to betray the signs of the severe demands he had made upon it. Symptoms of renal mischief declared themselves, and he had to relax much of his intense activity, though still maintaining his popularity as an expositor of his favourite themes, anthropological and hygienic. Gradually he withdrew from the public eye, finding solace and resource in his beautiful villa at San Terenzio on the Ligurian sea-board—the region still haunted by the "wraith" of Percy Bysshe Shelley—till last spring he had a final relapse and, as already stated, on August 28th passed peacefully away. His funeral on August 30th attracted many mourners from the Italian seats of learning, and *oraisons funèbres* of varied eloquence was pronounced over his bier. The whole press of Italy was at one in recording their sense of what the country had lost in him—no tribute, however, equalling in insight and discrimination the "estimate" of him given to the academic world by his friend and fellow worker, Giuseppe Sergi, professor of anthropology in the University of Rome.

JOSEPH NELSON, M.D. R.U.I., L.R.C.S. IREL.

WE announce with deep regret the death on August 31st, in his seventieth year, of Dr. Joseph Nelson, the well-known Belfast ophthalmic surgeon, which occurred in the city where he practised for so many years. Dr. Nelson was born in Downpatrick, one of the most historic of Irish cities, where his grandfather, Rev. Dr. James Nelson, was a great educationist, and where his father, Rev. S. Craig Nelson, was an extremely able Unitarian minister. Young Nelson, one of a large family, received his early education at home, and afterwards went to reside with an uncle in Belfast, and entered that famous training school of so many distinguished Ulstermen, the Royal Academical Institution, where it is a tradition that he shocked a staid teacher by submitting an essay defending cock-fighting. When he was reprimanded, his well-known uncle came to his aid by demanding from his instructor whether he was a teacher of morals or of composition. He later entered the Queen's College as a medical student, and, after pursuing his course for two years, an event occurred which altered his whole career. On receipt of the news that Garibaldi had left his island home at Caprera, he came under the magic spell of a United Italy, and with another student (Alexander Blakely Patterson, a County Tyrone man, afterwards a judge in India, who is now the sole survivor of the 10 "Britishers" associated with the liberation of Italy in 1860) young Nelson flung off cap and gown and slipped away to Genoa and fought all through the campaign. Gaining a commission in the "Regimento Inglese," commanded by Colonel Dunne and officered by English, Scotch, and Irish, he took part in all the battles, and was presented with a sword by Garibaldi, and in later years was decorated by the King of Italy with two medals.

Returning home Nelson and Patterson resumed their studies at college, where they were ever afterwards known by the prefix "Garibaldi," and in 1863 Nelson gained the M.D. of the old Queen's University (an institution to which he was always most loyal), and in the same year he became L.R.C.S. Irel. He then went to India as surgeon to a tea plantation, and later became himself a successful tea-planter. In 1878 he came home and decided to devote him specially to eye diseases, of which he had gained a good deal of experience in India, and in order to fit himself for the task he studied in Vienna under Professor Füchs (he was his assistant) and also became junior assistant at Professor F. R. v. Arlt's Klinik. In 1880 he began practice as an ophthalmologist in Belfast, and in 1882, when the new ophthalmic department was opened in connexion with the old Belfast Royal Hospital, he was appointed to its charge, and remained in the same position until three years ago (in the new Royal Victoria Hospital), when he resigned. He was also oculist to the Belfast Hospital for Sick Children. He was an ex-president of the Ulster Medical Society, and he acted as treasurer to the executive committee of the Belfast members of the British Medical Association during the annual meeting last year.

Dr. Nelson for many years had a large ophthalmic practice in Belfast and the north of Ireland, and he impressed patients and medical men who came in contact with him as a man who took the greatest care with every case. A thorough man of the world, one who had travelled much, a successful business man, and with a strong personality, Dr. Nelson was a great favourite, and will be much missed in social and medical circles. He was twice married, and his widow and five children survive him. He was buried privately at Downpatrick.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Farabeuf, formerly professor of anatomy in Paris and member of the Academy of Medicine.—Dr. A. Mürset, chief medical officer of the Swiss army.—Dr. Frederick Baumgarten, physician to the French Hospital, Mexico.—Dr. H. Schwartze, formerly professor of otology in the University of Halle.—Dr. Masse, formerly professor of operative medicine in Bordeaux and founder of the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux*.—Dr. Ludwig Scherer of Ludwigshafen, an important figure in German medical politics.—Dr. Leopold Oser, extraordinary professor of medicine in Vienna. He was born at Nikolsburg in 1839, and studied medicine in Vienna. He distinguished himself during the cholera epidemic in 1866. He was appointed extraordinary professor in 1885. His published works deal mostly with diseases of the stomach and intestines, and he contributed a monograph on diseases of the pancreas to Nothnagel's "Handbook of Special Pathology and Therapeutics."—Dr. Charles Jewett, professor of midwifery and gynæcology in Long Island College Hospital, Brooklyn.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Athens:* Dr. Constantin Bucura of Vienna has been offered the chair of Midwifery and Gynæcology.—*Berlin:* Dr. Georg Klemperer has been appointed Extraordinary Professor and Director of the Cancer Institute of the Charité in succession to Dr. Ernst v. Leyden.—*Budapest:* Dr. Géza Mansfeld has been recognised as *privat-docent* of Experimental Pharmacology; Dr. Desider Navratil as *privat-docent* of Rhino-Laryngology; and Dr. Adolf Juba as *privat-docent* of School Hygiene.—*Clausenburg:* Dr. Heinrich Kanitz has been recognise as *privat-docent* of Dermatology.—*Florence:* Dr. Domenico Taddie has been recognised as *privat-docent* of Urology.—*Freiburg:* Dr. v. Szilli has been recognised as *privat-docent* of Ophthalmology.—*Genoa:* Dr. Mario Truffi of Pavia has been recognised as *privat-docent* of Dermatology.—*Giessen:* Dr. v. Eicken, Extraordinary Professor in Freiburg, has been appointed Professor of Otology and Laryngology in succession to Dr. Leutert who has retired.—*Halle:* Dr. Georg Grund has been recognised as *privat-docent* of Medicine.—*Harvard:* Dr. Walter R. Brinckerhoff has been appointed Adjuget Professor of Pathological Anatomy, and Dr. S. B. Wolbach Adjunct Professor of Bacteriology.—*Jena:* Dr. Erich Lexer, Professor of Surgery in Königsberg, has been appointed Professor of Surgery in succession to Dr. Bernhard Riedel, who is retiring.—*Kharkoff:* Dr. Rubashkin of St. Petersburg has been appointed Professor of Histology and Embryology, and Dr. Bokarius Professor of Forensic Medicine.—*Kiel:* Dr. Walter Stoeckel of Marburg has been appointed Professor of Midwifery and Gynæclogy, in succession to Dr. Franz, who goes to Berlin. Dr. Ernst Baum, *privat-docent* of Surgery, has been granted the title of Professor. Dr. Rudolf Höber, *privat-docent* of Physiology, has also been granted the title of Professor.—*Königsberg:* Dr. A. Linck has been recognised as *privat-docent* of Otology.—*Lund:* Dr. Karl Petrén of Upsala has been appointed Professor of Medicine, and Dr. Gustav Ahlström Professor of Ophthalmology, in succession to Dr. Dalén.—*Montreal (McGill University):* Dr. Oskar C. Gruner has been appointed Lecturer on Pathology and Anatomy.—*Naples:* Dr. Giuseppe Buglia has been recognised as *privat-docent* of Experimental Physiology.—*New York Polyclinic Medical School and Hospital:* Dr. M. D. Ledermann has been appointed Extraordinary Professor of Laryngology and Rhinology.—*Pavia:* Dr. C. Baslini and

Dr. C. Genari have been recognised as *privat-docenten* of Ophthalmology, and Dr. A. de Simoni as *privat-docent* of Bacteriology.—*Padua:* Dr. Francesco Peruzzi has been recognised as *privat-docent* of Pædiatry.—*Palermo:* Dr. Luigi Philippson has been appointed Professor of Dermatology, and Dr. Gaetano Lodato Extraordinary Professor of Ophthalmology.—*Rome:* Dr. Gherardo Ferreri, Extraordinary Professor of Otology and Laryngology, and Dr. Domenico Lo Monaco, Extraordinary Professor of Physiological Chemistry, have been promoted to Ordinary Professorships.—*St. Petersburg Military Medical Academy:* Dr. D. Kryloff has been recognised as *privat-docent* of Medicine, and Dr. S. Vladichko as *privat-docent* of Neurology and Psychiatry.—*Turin:* Dr. Angelo Ceconi, Extraordinary Professor of Internal Pathology, Dr. Vicarelli, Extraordinary Professor of Midwifery and Gynæcology, and Dr. Giuseppe Gradenigo, Extraordinary Professor of Otology and Laryngology, have been promoted to Ordinary Professorships.—*Warsaw:* Dr. I. Pajarisky of Odessa has been appointed Professor of Pathological Anatomy in succession to Dr. Ushinsky resigned.—*Zürich:* Dr. Erwin Payr of Greifswald has been appointed Professor of Surgery.

ROYAL ABERDEEN HOSPITAL FOR SICK CHILDREN: NEW BUILDING PROPOSED.—On August 24th, at a meeting of directors of the Royal Hospital for Sick Children in Aberdeen, it was decided that a new hospital should be built, and a subcommittee was appointed to consider and report as to the best methods to be adopted to carry the resolution into effect. The great need for a new building has long been before the directors. The present hospital has been in use for 33 years, and, in the words of the chairman, Sir Thomas Burnett, at this year's meeting in February, the present accommodation is "not only unsuitable for a modern children's hospital, but hopelessly insufficient." In an ordinary way the resources are taxed to the uttermost, and when special seasons of illness occur many cases have to be refused admission. Some months ago the suggestion of a new children's hospital as a King Edward Memorial was made by Miss K. M. Lumsden; the question, however, had arisen as early as February, 1906.

THE SUICIDE OF A MEDICAL MAN FOLLOWING A GROUNDLESS ACCUSATION.—The evidence given at two inquests held recently at Lewisham in the course of the same week proved that the suicide of a medical man had been brought about by the worry and anxiety caused by a groundless accusation made against him. The first inquiry was upon the body of a retired stationer named Alfred Prewett, 82 years of age, who died on a Sunday night after having been ill since the preceding Thursday evening. He had been attended by Mr. M. A. de Quadros, a registered medical practitioner stated to be of Portuguese extraction, to whose wife Mr. Prewett was related and who was also his personal friend. Mrs. de Quadros and her daughter undertook the nursing, and when on the Sunday a female relative called and suggested that further medical advice should be obtained they raised no objection. The death of the old man, however, took place that evening, and Mr. de Quadros was prepared to give a certificate that it was due to exhaustion consequent on old age. On the next morning, however, the house was visited by two detectives accompanied by a medical man owing to information having been received at Scotland Yard which, according to the evidence given by a detective, was to the effect that the patient was lying ill under suspicious circumstances, and that Mr. de Quadros, who was attending him, would benefit under his will. The police and the medical man who accompanied them were satisfied by the answers made to their inquiries, but the effect of their intervention was that Mr. de Quadros wrote to the coroner saying that, although he was prepared to certify the cause of death, he would wait, in the circumstances, until he heard from that official, the same letter saying that the writer was "innocent" in the matter. The coroner as a not unnatural consequence requested Dr. F. S. Toogood to make a post-mortem examination, at which he invited Mr. de Quadros to be present, and held an inquest which exonerated him from blame. Unfortunately, before the inquest upon his former patient took place, Mr. de Quadros had taken his own life with prussic acid, and it was clear from the evidence given at the inquest upon him that the anxiety caused by the unexpected inquiries and suspicions set on foot was responsible for his doing so. In his case a verdict of "Suicide during temporary insanity" was returned, two days after the jury who inquired into the death of his patient had returned the verdict "Natural causes." It is hardly necessary to dwell upon the cruelty and injustice perpetrated by whoever invoked the aid of the police without any tangible grounds for so doing. The person or persons who did so failed to appear at either inquest to offer any evidence or to withdraw and express regret for the slanderous accusations which had so terrible a result. The coroner at the inquest upon Mr. de Quadros made some forcible observations as to this, pointing out that at least some attempt at reparation was due to the relatives of the deceased, and expressing his contempt for those who, owing to the privilege accorded to the police to refuse to give up the names of their informants, were able to remain anonymous.

GENEROUS GIFTS TO THE SOUTHPORT AND WIGAN INFIRMARIES.—The honorary secretary of the Southport Infirmary has acknowledged the receipt of £5000, the gift of Miss Swindells of Birkdale for the building and endowment of the "Swindells" ward of the infirmary, which is now in the course of erection.—The Mayor of Wigan is endeavouring to raise 1,000,000 sixpences to free the Wigan Infirmary from debt and to erect a new out-patient department as a memorial to the late King. The mayor has now received a letter from Lord Crawford, saying he would be pleased to guarantee £1000, and he suggested that for each £90 collected for the fund he should make it up to £100—in other words, he would add 10 per cent. to the fund collected.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALDRIDGE, F. J., M.B., B.Ch. Oxon., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Resident House Physician at St. Thomas's Hospital.

ARCHER, T. C. R., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BANKS, ALFRED, F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 51.

CLAY, JOHN, M.B. Durh., F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 1.

DOBELL, D. C., M.B., B.Ch. Oxon., has been appointed a Resident House Physician at St. Thomas's Hospital.

EDWARDS, ROBERT T. E., F.R.C.S. Edin., has been appointed Medical Officer of Health of Merionethshire.

FAWKES, M., M.B., B.S. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Midhurst District of the county of Sussex.

GIBBONS, JOHN F., L.R.C.P. & S. Dubl., has been appointed Assistant Resident Medical Officer at the Royal Albert Hospital, Devonport.

GLASS, ALEXANDER G., M.D Edin., D.P.H. R.C.P.S. Lond., has been appointed Medical Inspector of Schools of the United Counties of Roxburgh and Selkirk.

HOPWOOD, J. S., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

JOHNSON, G. PETGRAVE, M.D. Glasg., has been appointed Medical Officer of Health of the County Borough of Stoke-on-Trent.

KENNEDY, ROBERT, M.D. Glasg., has been appointed Visiting Surgeon to the Western Infirmary, Glasgow.

KNAGGS, R. LAWFORD, M.D. Cantab., F.R.C.S. Eng., has been appointed Consulting Police Surgeon in Leeds.

LAUDERDALE, E. M., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Resident House Physician at St. Thomas's Hospital.

MANN, H. L., M.R.C.S Eng., L.R.C.P. Lond., has been appointed a Casualty Assistant at St. Thomas's Hospital.

MARRINER, K. D., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

MAYBURY, B. C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

MIDDLETON, MARJORIE E., M.B., B.S. Lond., has been appointed Resident Medical Officer to the Haywood Hospital, Burslem.

MOHAMMED KHAN, M., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician at the Hospital for Diseases of the Chest, Brompton.

NESS, R. BARCLAY, M.B., F.F.P.S. Glasg., has been appointed Visiting Physician to the Western Infirmary, Glasgow.

PARKINSON, W. R., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

PRIDHAM, F. C., M.R.C.S Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

SEYMOUR, E. A., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Resident House Physician at St. Thomas's Hospital.

SHIPTON, W., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

SOMERVILLE, JAMES S., M.B. Glasg., has been appointed Junior House Surgeon to the Rochdale Infirmary.

WHITE, SINCLAIR, M.D. R.U.I., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Retford Hospital and Dispensary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with apartments, board, and laundry.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per annum, with apartments, board, and washing.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

BIRMINGHAM GENERAL HOSPITAL.—Resident Pathologist for six months. Salary £50 per annum, with board and residence.

BOURNEMOUTH, ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary £12 per month, with board, residence, and washing.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, &c.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant Surgeon.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, laundry, &c.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £100 per annum, with board, washing, apartments, &c.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £75 per annum, with board and lodging. Also Surgeon-in-Charge, unmarried, of Branch Dispensary, Salary £80 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, washing, and lodging.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon and House Physician. Salary in each case £80 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, board, laundry, &c.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians, also Two House Surgeons, for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Assistant Surgeon.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, washing, &c.

DUNDEE SCHOOL BOARD.—Assistant Medical Officer. Salary £250 per annum.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, unmarried. Salary £100 per annum, with board and laundry.

HALIFAX, ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with rooms, board, and washing.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

LEICESTER INFIRMARY.—House Physician. Salary at rate of £100 per annum, with board, lodging, and washing.

LIVERPOOL, CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LOCHGILPHEAD, ARGYLE AND BUTE ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, and laundry.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, lodging, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, residence, &c.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—House Surgeon. Salary £75 per annum, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salary for House Physician and House Surgeon at rate of £40 per annum; Assistant House Physician and Assistant House Surgeon at rate of £20 per annum, with residence and board. Also Resident Anæsthetist. Salary at rate of £60 per annum, with residence and board.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—Clinical Pathologist. Salary £50 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Honorary Assistant Physician.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer, unmarried, for six months. Salary £130, with board, residence, and washing.

PRESTWICH COUNTY ASYLUM, Manchester.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Joint Morning House Anæsthetist. Salary £25 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, all found.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALISBURY, FISHERTON HOUSE ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, washing, &c.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

SWANSEA UNION WORKHOUSE.—Assistant Medical Officer. Salary £215 per annum.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer, unmarried, for six months. Salary £100 per annum, with board, lodging, &c.

WAKEFIELD, WEST RIDING ASYLUM.—Medical Superintendent. Salary £1000 per annum. Also Senior Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance.

WOMEN'S IMPERIAL HEALTH ASSOCIATION.—House Lecturer (Female). Salary at rate of £150 per annum and all expenses.

Births, Marriages, and Deaths.

BIRTHS.

BURD.—On Sept. 1st, at Lanesde, Oaken, Wolverhampton, to Dr. and Mrs. Burd, a daughter.

CARD.—On Sept. 2nd, the wife of Alfred H. Card, M.R.C.S., L.R.C.P., of Muswell Rise, N., of a son.

GABB.—On Sept. 1st, at Cornwallis-gardens, Hastings, the wife of Harry Gabb, M.B., B.C., of a son.

TAYLOR.—On Sept. 2nd, at Melville-street, Edinburgh, the wife of William Macrae Taylor, M.B., F.R.C.S. Edin., of a daughter.

MARRIAGES.

BOYLE—GREEN.—On Sept. 3rd, at St. Marylebone Church, Henry Edmund Gaskin Boyle, M.R.C.S., L.R.C.P., to Mildred Ethel Green.

TURNER—WORSLEY.—On Sept. 1st, at St. Oswald's Parish Church, Winwick, Arthur Hewett Turner, M.R.C.S., L.R.C.P., to Helena J. B. Worsley, daughter of the late Mr. James Edwardson Worsley.

WILLCOCKS—MALCOLM.—On August 24th, at St. Mary's Church, Calicut, Malabar, S. India, Captain Roger Durant Willcocks, I.M.S., to Alice Maud, daughter of the late J. R. Malcolm.

DEATHS.

ALLIOTT.—On Sept. 2nd, at Ferndale, Sevenoaks, Alexander John Alliott, M.D. Cantab., in his 63rd year.

WAINEWRIGHT.—On August 29th, at Pontresina, Engadine, Benjamin Wainewright, M.B., C.M., F.R.C.S., aged 57 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE DIRTY MEDICINE BOTTLE.

Professor Joseph P. Remington, a prominent pharmaceutical teacher addressing a section of the American Medical Association at the recent meeting at St. Louis, called attention to the useful work which the pharmacist can do in the way of preventing infection from harmful bacteria. By way of illustration, he stated that several practices have been followed by careless and ignorant druggists, which have undoubtedly increased the death-rate in the past. Thus bottles and boxes coming direct from an infected sick room have frequently been refilled without proper cleansing. It is obvious that the blame for this dangerous practice rests largely with the nurse in charge of the case, who should see that corks and boxes from infected quarters are destroyed, and that bottles and other utensils are properly sterilised before passing into other hands. Corks are particularly dangerous as germ bearers, and there is no valid excuse for using them a second time. The old practices of biting a cork to soften it and moistening it with the tongue to make it fit the neck of the bottle are not altogether obsolete, disgusting though they are. The necessity for scrupulous cleanliness in dispensing is especially evident in the case of hypodermic injections and collyria. Care should be taken to sterilise the liquid to remove all flocculi and particles of dust, and to use perfectly clean utensils and containers. Such precautions call for greater care in the storage of dispensing materials and containers than is usually met with. A glance at the back of a dispensing screen too often reveals row after row of dusty bottles and jars, and syrup bottles coated around the neck with crystalline sugar and dust, upon which flies find a happy hunting ground.

INOCULATION OF SMALL-POX.

To the Editor of THE LANCET.

SIR,—At page 778 of THE LANCET of Sept. 3rd, in answer to a correspondent ("C. F. F.") the following statement is made: "Inoculation of small-pox was introduced into this country by Lady Mary Wortley Montagu in 1721, and we believe that this is the first recorded instance of the practice in these islands." Tanner's "Practice of Medicine," seventh edition, Vol. I., p. 281, has in a footnote the following: "The debt which our ancestors owe to this lady is not diminished by the fact that inoculation had been practised for very many years in South Wales, where it was known as 'Buying the small-pox,' for this circumstance only became generally recognised as Lady Montagu's views engaged attention, and while she enjoyed the privilege of being the best abused person in England.'" I beg respectfully to submit the above for further information.

I am, Sir, yours faithfully,

Sept. 4th, 1910. X.

TREATMENT OF THREADWORMS.

To the Editor of THE LANCET.

SIR,—For ten years or so I have treated threadworms with a suppository of ungt. hyd. nit. fort. grs. 7½. I direct the nurse to insert one each second night at bed-time, and have seen the best possible results from the treatment. For children under four years a smaller suppository may be used.

If your correspondent will write to me direct I will send him half a dozen suppositories to try.

I am, Sir, yours faithfully,

JOHN ROUND, L.R.C.P., L.R.C.S.

30, New Cross-road, London, S.E.

To the Editor of THE LANCET.

SIR,—In reply to "A. T." in THE LANCET of Sept. 3rd, p. 788, with reference to the treatment of threadworms, as clinical assistant to Dr. Theodore Fisher, at the East London Hospital for Children, I have found petroleum emulsion, prepared according to the "Codex" of the British Pharmaceutical Society, is most efficacious. Bad cases may be entirely cured within 24 hours. The emulsion is given in 1-drachm doses and upwards three or four times daily.

I am, Sir, yours faithfully,

Sept. 5th, 1910. H. PLATTS.

Agreement.—In the first instance the agreement should never have been entered upon without legal advice, and we must refer our correspondent to a lawyer for advice as to the real relations of the parties to it and as to the validity of the document. It would seem fair that the purchase price should be lowered as the earnings are not so high as was anticipated, but our correspondent must remember that he made his bargain presumably after due inquiry, so that he will find it very difficult to escape the consequences.

A Student of Medicine has omitted to enclose his address. We find that the gentleman named is correctly given at the street whence his advertisement emanates in the current Nisbet's Directory. He seems to have moved during the year from the country into London and not to have notified the fact to the Medical Register or the Medical Directory.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

CONGRESSES are now getting so numerous that we have thought that a diary like the one printed below might be of service to our readers. With that idea we shall repeat it occasionally, with any necessary alterations or subtractions. The following Congresses, Conferences, and Exhibitions are announced for 1910:—

Sept. 10th–14th (Brussels).—Second International Congress on Occupational Diseases.
" 13th–15th (Brussels).—International Congress on Radiology and Electricity.
" 17th–25th (Antwerp).—Fourteenth Flemish Congress of Natural and Medical Sciences and International Scientific Exhibition.
" 18th–24th (Königsberg).—Eighty-second Congress of German Scientists and Medical Men.
" 22nd–27th (Toulouse).—Sixth French Congress of Gynæcology, Obstetrics, and Pædiatrics.
" 22nd–28th (St. Petersburg).—Fifth International Congress of Obstetrics and Gynæcology.
" 27th–30th (Vienna).—Eighth International Physiological Congress.
Oct. 1st–5th (Paris).—Second International Conference for the Study of Cancer.
" 3rd–7th (London).—Sixth London Medical Exhibition.
" 3rd–7th (Berlin).—International Congress on the Care of the Insane.
" 4th–8th (Brussels).—Second International Congress of Alimentary Hygiene.
" 5th–8th (Brussels).—Ninth International Tuberculosis Conference.
" 10th–15th (London).—Town Planning Conference.
" 13th–15th (Paris).—Eleventh French Congress of Medicine.
" 16th–22nd (Barcelona).—First International Spanish Congress of Tuberculosis.
Nov. 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).

In 1911:—
May–October (Dresden).—International Hygiene Exhibition.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
Sept. 24th–30th (Rome).—International Congress on Tuberculosis.
October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913 the only fixture so far is in London, where the Seventeenth International Congress of Medicine will take place.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.
MONDAY.—College re-opens.
TUESDAY.—4 P.M., Dr. J. E. Squire: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. E. M. Corner: Clinique (Surgical).
THURSDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical).
FRIDAY.—4 P.M., Mr. W. Hill: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.
MONDAY.—2 P.M., Clinical Demonstration: Dr. Wall: Diseases of the Lungs.

TUESDAY.—2 P.M., Clinical Demonstration: Dr. Grünbaum: Diseases of the Kidneys.
WEDNESDAY.—2 P.M., Clinical Demonstration: Dr. Hutchison: Diseases of the Digestive System and Children's Diseases
THURSDAY.—2 P.M., Clinical Demonstration: Dr. T. Thompson: Diseases of the Nervous System.
FRIDAY.—2 P.M., Clinical Demonstration: Dr. L. Smith: Diseases of the Heart and Vessels.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1910, which was completed with the issue of June 25th, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1910 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 7th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 1	30·28	N.W.	...	117	68	56	54	59	Fine
,, 2	30·24	W.	...	101	71	58	58	59	Overcast
,, 3	30·18	N.W.	...	118	67	54	53	58	Fine
,, 4	30·20	N.	...	72	60	50	52	56	Cloudy
,, 5	30·22	N.	...	75	61	51	52	55	Overcast
,, 6	30·16	N.	...	90	61	54	52	55	Cloudy
,, 7	30·24	NNE	...	91	58	53	53	56	Overcast

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